



International Commission of Agricultural and Biosystems Engineering

# CIGR

Newsletter Quarterly

**Newsletter No. 100 Special Issue  
December 2013**

*Since 1930  
83 Years of CIGR*

- 1. Messages from President and Secretary General ..... 2**
- 2. Messages from Former Presidents..... 3**
- 3. Messages from CIGR Regional Members..... 4**
- 4. Messages from CIGR National Members..... 5**

***Commission Internationale du Génie Rural (CIGR)***

CIGR Website: <http://www.cigr.org/>

## Happy 100th Anniversary Message from the President

A very warm welcome to all those reading this special edition of CIGR newsletter and joining in the celebration of the publication of the 100th issue of CIGR Newsletter.

CIGR began to publish its newsletter about 30 years ago. This publication is sent to CIGR members by post and is also available in CIGR website. CIGR Newsletter contains information on member associations, members, sections, working groups, future events such as congresses, seminars, symposia, workshops, etc. It also highlights new publications, lists publications that are available from CIGR and publicises vacant positions. CIGR Newsletter has in the past many years provided a timely channel to disseminate and shared information on what is going on within our organisation among the CIGR community.



Prof. Da-Wen Sun

The edition of CIGR Newsletter is one of the main duties of CIGR Secretary-General. Although CIGR Secretary-General has been changed many times over the years, the newsletter has always been published in its highest quality containing abundant information for our profession. This shows the dedication and devotion of CIGR Secretary-General, and I would like to congratulate to all those involved for their excellent work and also express my sincere appreciation for their significant contributions on behalf of CIGR.

As we are now living in the digital society, beginning from the next issue, CIGR Newsletter will change its publication from paper format to electronic format with new layout. I am confident that this change will enable the newsletter to better serve our community, as we will no longer be restricted by the page limit and we can also contain colour information in the newsletter, most importantly, the newsletter will be available immediately when its edition is finished.

Finally, in this celebratory issue, I want to thank all who have helped CIGR to sustain and expand CIGR success as it is today.

*Prof. Da-Wen Sun  
President of CIGR*

## Publishing No.100 Special Issue of CIGR Newsletter Message from the Secretary General

Dear Colleagues,

I am very delighted to publish the memorable No. 100 Special Issue of CIGR Newsletter. On behalf of current General Secretariat, Secretary General of CIGR, Prof. Toshinori Kimura would like to extend his sincere appreciation to CIGR members who have submitted

manuscripts containing valuable information since 1980s when the inauguration issue was published.

To my surprise, no record or information about the first issue of CIGR Newsletter has handed down to the current General Secretariat. Although I sent inquiries to some of the past Secretary Generals, I received replies that all of them are not sure when publication of CIGR Newsletter started. According to Prof. J. Daelemans (Secretary General; 1989-1998), when he became SG of CIGR, CIGR Newsletter had existed already. If I count backward from the fact that No. 28 came out in October of 1994, it may be in 1987 or 1986 that No. 1 Inauguration Issue was published.

Unlike today, printed CIGR Newsletter containing various informations such as news of CIGR operation and member societies, announcements regarding congresses and conferences and so forth had been the sole source of information in the first decade since launching the No.1 issue. From those days until today, CIGR member societies have received lots of information from the newsletter and they have sent announcements or reports of their activities to the world through the newsletter. I am sure CIGR Newsletters have played very important and quality roles for maintaining of our profession. I would like to extend my appreciation to the past General Secretariats for their tireless efforts to publish the Newsletter continuously.



Prof. Toshinori Kimura

Nowadays, as President, Prof. Da-Wen Sun wrote in this Newsletter, we have many options for communication methods that have advantages of quick communication and less restriction in the page limit and the format.

In this connection, CIGR Presidium decided to change the publication style from printing type to electronic one and to redesign CIGR Website. Next issue to be published in next year will be uploaded on the website as soon as completion of editorial work. Then all over the world, not only the member societies but also non-member societies or individuals can read the Newsletter almost at the same time.

Lastly I would like to introduce the fact that, this year, Yanmar Co. Japan which has been a sponsor company of advertising in CIGR Newsletter for 8 years celebrated its 100 years anniversary, which number is coincidentally same as the number of this Newsletter. So, I asked them to submit a brief note on their history to this No. 100 issue together with the advertisement on the last page.

Once again I would like to extend my appreciation to all the CIGR colleagues who have helped CIGR Newsletter's publishing and I do hope that new electric Newsletter will be of benefit to all the CIGR members and will contribute to further success of CIGR.

Thanking you and with best regards,

*Prof. Toshinori Kimura  
Secretary General of CIGR*

## Message from the Former President

I wish to congratulate the Secretary General, Professor Toshinori Kimura on the imminent publication of the CIGR Newsletter No.100 Special Issue in December, 2013. It reminded me of the time when I was elected President of CIGR in 1989. It was the proudest moment of my life not just for me, but as a recognition of the activities on my colleagues in Agricultural and Biosystems Engineering in Ireland.

My Presidency came with the responsibility for hosting the 11th International Congress of Agricultural Engineering in Dublin in 1989. I had been forewarned that organising such a venture would require financial support. However, I was determined that the Congress should be self-financing. When my objective was accomplished, I was delighted and relieved. It had been made possible by the participation of international colleagues who flocked to Dublin for a historic occasion.

The appointment of my colleague, Professor Da-Wen Sun as President of CIGR in 2013 has underpinned the contribution of my colleagues in Ireland to a truly great international organisation now poised for greater times to come.

*Prof. Paul McNulty  
President of CIGR 1989-1991*

## Message from the Former President

Looking back over involvements in CIGR activities over nearly 40 years, there are things which have made deep impression on me. Some of them are already mentioned in former CIGR Newsletters.

Forty years ago new developments and results were expected to last for long periods, opposite today, where results sometimes are outdated very quickly. Therefore in former time conference and congress papers were normally issued in bound books of full papers, intended to act as handbooks for coming years and stored at personal bookshelves and at libraries. Today conference papers are often collected on CD's, where the publishing time is short (often in the last minutes) and the reproduction cost of the final media is low, thanks to the implementation of computer technology around the eighties. At the same time the number of symposiums, conferences and congresses are speeded up. The numbers of CIGR congresses over 40 years from 1930 to 1970 were e.g. only 6, mainly held in Europe. For the following 40 years 1970–2010, there were held 11 including CIGR conferences, which were introduced after the millennium. Not forgetting published scientific papers in the CIGR Journal, Agricultural Engineering International over 15 years. The congresses and conferences are today placed much more worldwide and the number of participants seems increasing. It shows that CIGR plays a growing key role in respect to dissemination of research results.

Another interesting observation is about the conference language, where it in former time was allowed to use more languages as example at the congress in Hungary in 1984, where about five different languages were included with simultaneously translation. It was not at that time fully clarified that English should be the only official language in



Prof. Søren Pedersen

CIGR. Today we are fortunately free of costly translations via headphones. For the next decades it is my hope that the development will continue and keep CIGR in front in respect to the exchange of research results generated as well between researchers as globally. With regard to the celebration of the first 100 editions of CIGR Newsletter it is also my hope that coming board members will find it useful to continue with the release of the CIGR Newsletter in the way as we know it today, well knowing that CIGR Newsletters today often are disseminated electronically, in contrast to earlier only in paper versions. For all those who are interested in CIGR's history the newsletter gives a very fine documentation of CIGR's life through time.

*Prof. Søren Pedersen  
President of CIGR 2009-2010*

## Message from the Former Secretary General



Prof. Peter Schulze  
Lammers

CIGR is the world association of agricultural engineers embracing a wide range of engineering disciplines. Worldwide activities within a very broad technical domain and the close link to agriculture as a multidisciplinary science have made CIGR a society of professionals dedicated to food security, the protection of the environment and a sustainable use of natural resources. CIGR has a long tradition of working for these goals to be achieved. The World Congresses are major events offering opportunities to develop the society itself and the subjects its members focus on. The sections complement the World Congress with continuous activities structured into different fields of research.

The Newsletter has never been intended to be a scientific journal but rather to inform the members on issues relevant for the society. In this way, it is part of the organizational entities of CIGR. One unique feature was the light brown colour of the pages - now light green. It is a layout which discriminates the Newsletter from all other journals on your desk. The Newsletter was and is a publication organ from members for members disseminating issues of interest for agricultural engineering societies around the world. Messages from the active officers and announcements of meetings and congresses are the major content of the Newsletter. Regular updates on individual persons have never been part of our print medium; highlighting outstanding members is the purpose of the CIGR awards. However, the digital age may require a transition from traditional paperwork to the use of electronic media in the future.

*Prof. Peter Schulze Lammers*  
*Secretary General of CIGR 1998-2005*

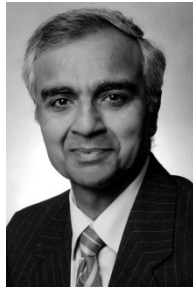
## **Message from CIGR Regional Member Society, ASABE**

The American Society of Agricultural and Biological Engineers (ASABE)

congratulates CIGR upon the historic 100th edition of the CIGR Newsletter for Global Partners. ASABE is proud to be a Regional Member Society and strong supporter of CIGR. Our Society shares CIGR's vision of global engagement in promoting the agricultural and biological engineering profession. Our profession has made many significant contributions to feeding the world and providing for its needs, and yet we face unprecedented challenges in sustainably meeting the growing global demands for safe and nutritious food, clean water, renewable energy, and more. This professional legacy must continue in global partnerships to serve humanity.

To increase our engagement with the agricultural and biological engineering challenges on the horizon, ASABE is committed to supporting CIGR in its global mission. We look forward to an ongoing, in tandem promotion of our profession and affirming our unique expertise in providing the essential needs of life. We must expand our worldwide influence and memberships through collaborations—to continue our leadership in addressing the coming challenges related to water, land, food, air, energy, sustainability, and economics—and engage in all opportunities available to us. These efforts will promote our organizations, and underscore the value of our profession, in actively providing for humanity's future.

Prof. Lalit R. Verma



*Prof. Lalit R. Verma*  
*President of ASABE*

## **Message from CIGR Regional Member Society, EurAgEng**

First of all congratulations to CIGR on the issue of CIGR Newsletter number 100 from the members of EurAgEng!

EurAgEng is proud to work alongside CIGR as the major regional member and in recent years we have held some very successful joint

Conferences with CIGR colleagues. Remember Valencia 2012! Over 1000 engineers came together to share expertise and to network with colleagues worldwide in the beautiful Spanish city. We are looking forward to the next joint conference to be held in Europe in 2016 to be at the University of Aarhus in Denmark. The 4th CIGR International Conference – AgEng Conference 2016 will

Prof. Robert Kaufmann



once again focus on the current issues and debates in feeding the world with an emphasis on Robotics, Environment and Food Safety.

Meanwhile CIGR members are cordially invited to take part in AgEng 2014 which will be held in Zurich from 6-10th July 2014. The conferences takes place at the ETH University, in the heart of Zurich, and for a full list of topics to be covered please visit the conference website [www.ageng2014.ch](http://www.ageng2014.ch). We hope that CIGR members are also able to attend the LandTechnik AgEng series of conferences which take place every two years in Hannover, Germany prior to Agritechnica in November. These conferences are organised by VDI-MEG, and provide an opportunity to mix with many colleagues from industry as well as academia.

As well as supporting the organisation of international conferences, EurAgEng aims to promote the role of the agricultural and biosystems engineers within the European community and has a growing membership within Eastern European countries. Members are kept informed of EU calls and consortia, sector news, job opportunities, research funds and dissemination of results. The EurAgEng Award of Merit is presented each year and recognises the work of leading experts in the area. Past winners include Ray Clay, JCB UK; Michael Teich, John Deere Germany; Jacques Burel, Sulky-Burel France; Franz Grimme, Germany and last year Professor Jos Metz, Wageningen University, The Netherlands. There is also a new award for younger engineers; the Francis Sevilla Award which is presented in memory of one of EurAgEng's founding members.

To find out more about EurAgEng visit [www.eurageng.eu](http://www.eurageng.eu) and remember a warm welcome awaits CIGR members in Zurich in 2014!

Congratulations once again; we look forward to the next 100 editions.

*Prof. Robert Kaufmann*  
*President of EurAgEng 2012-2014*

## **Message from CIGR Regional Member Society, AAAE**

Congratulations to the 100th Issue of CIGR Newsletter! These Newsletters are not only testimony of the contributions that CIGR has made in promoting agricultural and biosystems profession worldwide in the past 83 years, but also showed the diligent and sustained efforts of the CIGR Secretariat in editing and coordination. I would like to take the opportunity to express my high appreciation to all the CIGR Presidents and the CIGR Secretariats for their meritorious services in providing updated information of agricultural and biosystems engineering!

CIGR Newsletter serves as a global information exchange forum for the researchers and engineers in agricultural and biosystems engineering. Through CIGR Newsletter, we keep track of the latest academic activities sponsored by CIGR, member news, statistics of the CIGR Journal and so on. It played the role of a bridge among not only the CIGR members, but those who had the chance to read it as well.

As a regional member of CIGR, Asian Association for Agricultural Engineering (AAAE) has always dedicated

itself to assisting CIGR in organizing the conferences related to agricultural engineering and actively participating in CIGR academic and technical activities worldwide. As a co-sponsor of CIGR 18th World Congress in Beijing in 2014, AAAE will call on its members to submit their papers, attend the Congress and will spare no efforts in working with CIGR to make it a milestone event.

Once again, my congratulations to the 100th Issue of CIGR Newsletter! The future of CIGR as well as the CIGR Newsletter will be written with much more achievements! I hope that the collaborations between CIGR and AAAE will be more and closer.

*Prof. Shunjun Li  
President of AAAE*

### **Message from CIGR Regional Member Society, ALIA**

ALIA, a regional member of CIGR congratulates NL 100. The Newsletters of CIGR are very helpful for professionals and students in Latin American and Caribbean countries, to be updated with important information related to agricultural engineering activities worldwide.



*Dr. Wilson Esquivel*

The NLs are translated to Spanish for better understanding in our region.

It is important for ALIA to have the main events in our countries announced by CIGR NLs for our colleagues around the world.

As President of ALIA I wish continuous success for CIGR Newsletter.

*Dr. Wilson Esquivel  
President of ALIA*

### **Message from CIGR National Member Society, JAICABE (Japan)**

As President of the Japan Association of the International Commission of Agricultural and Biosystems Engineering (JAICABE), it is my honor to present congratulations on the occasion of the 100th edition of the CIGR Newsletter. The Newsletter provides current information on the activities of CIGR and CIGR-affiliated national societies worldwide.

The Science Council of Japan (SCJ), which represents Japanese scientific community and provides scientific advice to the government, is registered as CIGR National Member. JAICABE, which consists of ten societies, embodies the activities of CIGR, supported by SCJ. JAICABE and the individual members of ten societies of JAICABE have received great benefits from CIGR Newsletter. JAICABE has also supported the activities of the General Secretariat of CIGR since 2006, publishing the Newsletter, and supported the CIGR activities in Japan; we convened the XIV Memorial CIGR World Congress 2000 in Tsukuba and the CIGR International Symposium (WEF 2011) in Tokyo.

Japan is currently dealing with many issues, such as the need to improve our agricultural fields and the difficult situation with fewer successors to our aging population of farmers. Such problems in Japan today will be the world's problems in the future, but they can be greatly mitigated by using modern technologies such as sensing, informatics, and robotics. CIGR and its member societies also play important roles in addressing global problems concerning food security and trade, water resources, global change, and desertification. JAICABE, alongside CIGR, intends to help to address these challenges. The Newsletter plays an important role in facilitating the exchange of information on these issues among members of the International Commission of Agricultural and Biosystems Engineering throughout the world.



*Prof. Kenji Omasa*

*Prof. Kenji Omasa  
President of JAICABE*

### **Message from CIGR National Member Society, SBEA (Brazil)**

It is an honor for SBEA (Brazilian Association of Agricultural Engineering), being part of the memorable CIGR Newsletter No. 100 Special edition.



*Prof. Daniella Jorge de Moura*

The Brazilian Society of Agricultural Engineering was founded in 1965. It had a great improvement in 1976. Since then, the SBEA has organized national meetings in different regions of our nation maintaining the objective of discussing and disseminating scientific knowledge in applied Agricultural Engineering.

Also, SBEA publishes a scientific Journal named Agricultural Engineering Journal with an impact factor of 0,353 and is growing time by time. To publish in this scientific journal one has to submit articles that can be written in English on line at the address:

<http://submission.scielo.br/index.php/eagri/index>. Besides that, the SBEA promotes Scientific and Technical meetings, technical Courses and yearly national meeting held in different regions of the country every year. The next Agricultural Engineering Brazilian Congress will be held from 27th to 31st of July, 2014 in Campo Grande city, located in the heart of Brazilian agricultural production, mainly grains and extensively raised cattle. Besides that, it will be a great opportunity for the attendees to visit the biome Pantanal or the most preserved clear water resort called Bonito.

For more information one can access:  
<http://www.sbea.org.br/conbea2013/>

Today, SBEA has the honor of being a CIGR's major National Member, and in this opportunity, on behalf of SBEA, I want to congratulate the CIGR, especially for the

memorable Newsletter Special Issue No. 100 and for all the achievements of the Actual and Past presidents of CIGR.

Yours sincerely,

*Prof. Daniella Jorge de Moura  
President of SBEA*

## Message from CIGR National Member Society, CSAM (China)

On behalf of the Chinese Society of Agricultural Machinery (CSAM), I hereby extend my congratulations to CIGR Newsletter Quarterly on the occasion of its 100th issue.

In the past 83 years, CIGR has been playing the role model of promoting academic communication and cooperation in the area agricultural and biosystems engineering worldwide. As one of its many publications, the CIGR Newsletter Quarterly has done a fantastic job on recording outstanding accomplishments of CIGR members, commemorating former distinguished figures, updating information on world congresses, conferences, symposiums, workshops, CIGR Journal and etc. I believe that CIGR Newsletter will be faithful in carrying out these meaningful duties and contribute itself in enhancing exchanges and information sharing among its members as well as the world agricultural and biosystems engineering scientists and engineers.

CSAM will celebrate its 50th Anniversary in Beijing on Nov.3, 2013. Looking back, CSAM witnessed the fast development of Chinese Agricultural Mechanization. I myself also experienced the close and productive collaboration between CSAM and CIGR after became a member of CIGR with CSAE in 1989. Chinese scientists in agricultural engineering have benefited so much from CIGR academic activities and publications. On this occasion, I would like to express my sincerest gratitude for CIGR in promoting the profession of agricultural engineering.

For the better life of global people, for the better world, CSAM will work even more closely with CIGR by means of researching, introducing and exchanging the advanced technologies of agricultural and biosystems engineering.

I wish CIGR Newsletter Quarterly continued success.

*Prof. LUO Xiwen  
President of Chinese Society of Agricultural Machinery  
(CSAM)*

## Message from Editor in Chief of CIGR Newsletter

Dear readers of CIGR Newsletter



A. Prof. Yutaka Kaizu

I would like to offer my congratulations on the 100th issue of the CIGR Newsletter. I have had the privilege of editing 12 issues of this newsletter since 2009. Initially, I had little knowledge of CIGR, but I have learned a lot about its objectives and activities during my editorial period. I sincerely thank the international members for sending

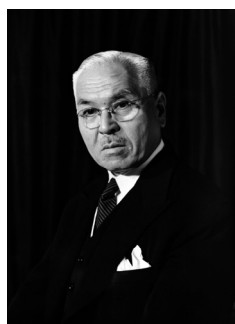
their manuscripts on time, and greatly appreciate the efforts of Dr. Kimura, Dr. Kawamura, Dr. Inoue and Dr. Shimizu for their devoted proofreading. I am also immensely grateful to Ms. Tanaka for helping out with the editorial work, corresponding with the members and collecting all manuscripts; I have to admit that she was in effect another editor-in-chief.

I look forward to seeing you at conferences in the future.

Thank you very much.

*Assoc. Prof. Dr. Yutaka Kaizu  
Editor-in-Chief of  
CIGR Newsletter*

## A Century of Yanmar



*Mr. Magokichi  
Yamaoka*

Yanmar has developed machinery for a wide range of industries from agriculture to fisheries and many others from the strength of its core diesel engine business. On the basis of the Spirit of our founder, Magokichi Yamaoka: "Grateful to serve for a better world", Yanmar has contributed to the development of society, blazed a trail in this new era.

A leader and innovator in harnessing energy, Yanmar has contributed to an environmentally sustainable society, through the delivery of unrivalled products and services, and celebrated the centennial of its founding in March 2012. The foundations of this enterprise were laid by Magokichi Yamaoka, the grandfather of the fourth and current president Takehito Yamaoka.

The sixth of ten siblings, Magokichi was born in 1888 in Japan's Shiga Prefecture. At 15, he set off alone for Osaka, and at the tender age of 19 established Yamaoka Gas Shokai, repairing gas engines and selling reconditioned ones.

Five years later on March the 22nd 1912, he founded Yamaoka Hatsudouki Kosakusho in Osaka. This was to be the beginning of Yanmar's illustrious history.

In 1914 the First World War began bringing about a period of unprecedented prosperity for Japanese industry. In the midst of this industrial boom, Magokichi undertook a grand promotion, placing advertisements in the 10 main newspapers of the day over a whole month. They had a big impact and the "Yamaoka Engine" became a household name throughout the land. Sales grew considerably.

In 1921, the company succeeded in developing a horizontal oil engine of superior performance. They registered the trademark "Yanmar" and began production calling the it the "Yanmar variable oil engine". The story goes that

originally Magokichi wanted “Tonbo”, Japanese for dragonfly and a symbol of prosperity, for the trademark, but this was already taken. Instead, he chose the name of the oni-yanma, the king of dragonflies, and combining it with the “Yama” from his own family name, coined the “Yanmar” trademark.

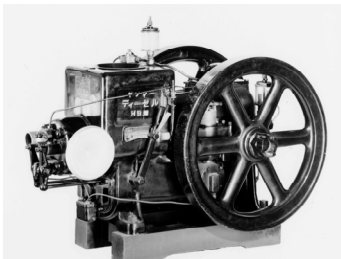
In 1929 at an engine expo in Osaka, Magokichi encountered the diesel engine. This ground-breaking engine used less than half the fuel of a conventional oil engine and ran on cheaper heavy oil. In 1932, he visited the Leipzig Messe, in Germany, where he saw the large diesel engines on display. On top of its economic benefits, diesel fuel was a far safer fuel than oil, being less likely to ignite and accidentally cause fires. Magokichi was entranced by the possibilities. Upon returning to Japan, he began work on a

small diesel engine. More than a year after the start of development and on the verge of giving up, they finally succeeded in building the world’s first small diesel engine. It was December, 1933. This achievement laid the foundations for Yanmar’s later growth.

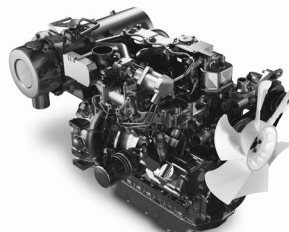
After creating the world’s first small diesel engine, Yanmar went on to develop innovative products in the domains of food production and harnessing power.

Providing solutions through its “Solutioneering”, based on its core diesel engine business, the Yanmar Group looks to the coming century, contributing to society and improving people’s lives.

Yanmar Co., Ltd.



World’s first small horizontal water-cooled diesel engine: Type HB 5-6 hp



Yanmar vertical water-cooled diesel engine TNV series



Y-concept YT01 advanced tractor

<b>CIGR Section Boards</b> (2011-2014)	
<b>Section I:</b>	<i>Land and Water</i> (Chair: Guanhua Huang [China])
<b>Section II:</b>	<i>Structures and Environment</i> (Chair: Thomas Banhazi [Australia])
<b>Section III:</b>	<i>Plant Production</i> (Chair: John K. Schueller [USA])
<b>Section IV:</b>	<i>Energy in Agriculture</i> (Chair: Janusz Piechocki [Poland])
<b>Section V:</b>	<i>System Management</i> (Chair: Claus Gron Soerensen [Denmark])
<b>Section VI:</b>	<i>Bioprocesses</i> (Chair: Linus Opara [South Africa])
<b>Section VII:</b>	<i>Information Technology</i> (Chair: Seishi Ninomiya [Japan])

**All correspondence and information on forthcoming activities should be sent to:**

**CIGR GENERAL SECRETARIAT**

**Professor Dr. Toshinori Kimura, Secretary General**  
**Associate Professor Dr. Yutaka Kaizu, Editor in Chief**

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