



The International Academy for Production Engineering

NEWSLETTER

N° 60 – Spring 2020

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From the President

Dear CIRP Colleagues,

I believe that many CIRP members will have been spending a difficult time inconvenienced due to the pandemic caused by the spread of the novel coronavirus. Firstly, I sincerely hope that everyone has been, and will remain to be safe and healthy.

This “Coronavirus Era” is characterized by being worldwide. It will take time before the effect of the novel coronavirus comes to a closure because it is said that we need more time to develop highly effective medicines and vaccines to overcome the novel coronavirus. Therefore, from now on, we will have to coexist with the virus for a while. I understand that we are now in the era being called “with corona”.



Many people say that economic activity stagnates and the industrial structure, more or less, changes in the “with corona” or “post-corona” era. Globalization has been aimed, so far, for the physical movement, contact and interaction of people and things. However, they will now be localized for a while. The aviation and automotive industries, in particular, will have a hard time because the impact of the restriction will be large for transportation which involves the movements of people. Therefore, economic recovery will be delayed, for example, in tourism and transportation. On the other hand, physical movement, contact and interaction has gained a rarity value, and become more substantive, while virtual contact, interaction and transportation of people and things using cyber space has become more and more popular, and therefore, are no longer special. Interaction using cyber space and the development of related technologies have been promoted so far, but they have been and are expected to be accelerated during this fight against the novel coronavirus.

Research and development in cyber space such as various kinds of simulator and technology fused with IT and AI have been promoted in the area of manufacturing engineering. I suppose that they have been greatly advanced even while we have been fighting against the novel coronavirus. However, since we are not able to try and verify this using actual machines, you may feel frustrated and have come to realize their importance once more.

As for communication among researchers, I suppose that in well-established communities, such as ours, we are able to keep in touch ever more closely during this Coronavirus Era than before using interaction through cyber space. However, it has been found to be difficult to encounter with new things and people with different ideas through online meetings. I really hope that CIRP will be able to increase its performance and visibility, enhancing the information transmission capability, for the development of the future of this academy by taking advantage of both the valuable

physical encounter with new things and people in different research areas to establish a new relationship, and the close communication in cyber space, in a time when many international conferences and meetings are held virtually or in a hybrid style. Even though our keynote speeches and papers are presented as video recordings this summer, we will be setting up a place for questions and answers. We would like to encourage your active participation in our e-conference to create a new communication style both inside among the CIRP members as well as with those outside the community.

I would greatly appreciate your support and cooperation with us so that CIRP may contribute to our future society.

With best regards,

Mamoru MITSUISHI
President of CIRP 2019-2020

From the editor

Dear CIRP colleagues,

It is a pleasure to present the next CIRP newsletter. Besides the well used CIRP website (www.cirp.net), the newsletter brings any kind of news from CIRP members and for CIRP members.

All kind of news (news from members, awards, books written by members,...) relevant for our CIRP academy, is always welcome. Organizers of CIRP conferences are invited to send a small report (high lights, pictures,..) that can be published in the newsletter. Input can be sent to the CIRP office (cirp@cirp.net) or directly to me (bert.lauwers@kuleuven.be).



As in the previous newsletter, I would like to draw your attention again to the section on our web-site “Education Portal”. The portal is meant to be a medium to share relevant information related to manufacturing education. Any member who wants to contribute to this education section is welcome to do so. ***Especially in these times, where many of us are challenged to teach lectures and practical sessions in a COVID-proof way. We will be happy if you share new ideas, new ways of working on our CIRP education portal.*** Any relevant information can be sent to the CIRP Secretariat (cirp@cirp.net).



Bert Lauwers
CIRP Technical Secretary

CIRP Video Paper Sessions

24-28 August 2020

We remind you that the 70th CIRP General Assembly has been postponed to next year, which means that there will be no meeting this year, except for the following closed meetings:

The Board, Council, Membership, Communication and reduced Liaison Committees will meet by e-meetings during the week 24-28 August 2020, in order not to delay the activities, and among other matters, the elections or renewals of members. Then, the results of all elections / nominations (Fellows, Associate members, Renewals, Emeritus requests and Research Affiliates) will be sent to you at the end of August 2020, together with the Financial and Moral reports that need to be validated by your electronic votes. These electronic votes will take place next end of August, to comply with the French law.

Moreover, in order to have the 2020 CIRP Annals presented, the CIRP Council has decided to organize recorded video paper sessions. The recorded video presentations of the Papers / Keynote Papers / ITPs will be posted on our CIRP Website (through the Menu Education → Forum).

- The authors/presenters of the Papers and Keynote Papers to be published in the 2020 CIRP Annals Vol.1 & 2 are requested to upload a recorded video presentation of their paper through the form available here under, as soon as possible and by August 13th the very latest. STC Chairs will check the presentations prior to the sessions.
- The video presentations will be online during the week formerly scheduled for the GA, on August 24-28 August 2020, and left online up to the end of September 2020.
- The links to the video presentations will be available from the Forum, where one topic per paper will be created, allowing questions/answers directly inside the topics. Discussions will remain opened up to the end of September too.
- The same will apply for the ITP (Industrial Technical Papers) from Corporate members.
- Members and RAs will just have to log in to get access to the presentations. Access is free of charge.
- Guests can be invited following the usual rules for a GA: one guest per member. Guests will have to pay a participation fee of 100 € to create their own account on the website and get access to the Forum and the Video Presentations.

You will find all information to prepare and upload your video presentation - and to invite a guest - through that page also opened to the Guests (you must be logged in):

<https://www.cirp.net/meetings-conferences/about-cirp-events/august-2020-video-paper-sessions.html>

News from Members

Three CIRP members receive a 2020 SME international Honor Award

<https://www.sme.org/aboutsme/awards/international-honor-awards/2020-sme-international-honor-award-winners/>

Professor Jian CAO receives the SME Gold Medal. She is awarded the SME Gold Medal for her creative and pioneering contributions to the development of the scientific and technological bases of innovative manufacturing processes through extensive publication, speaking and public service activities.



Prof. Cao specialized in innovative manufacturing processes and systems, particularly in the areas of deformation-based processes and laser processes. She views manufacturing as an integration platform. Prof. Cao is the editor-in-chief of the “Journal of Materials Processing Technology” and a board member of mHUB, Chicago's first innovation center focused on physical product development and manufacturing. Cao is a fellow of SME, American Association for the Advancement of Science, ASME and CIRP. Her major awards include the Vannevar Bush Faculty Fellow from DoD (2019), Charles Russ Richards Memorial Award (2017) from ASME and Pi Tau Sigma, SME Frederick W. Taylor Research Medal (2016), ASME Blackall Machine Tool and Gage Award (2012, 2018), SME Outstanding Young Manufacturing Engineer Award (2002) and the NSF CAREER Award (1997). She served as president of the North America Manufacturing Research Institution of SME (NAMRI | SME, 2011-12) and program director at the National Science Foundation (2003-05).

Within CIRP, Prof Cao served as an officer of STC-F from 2011 – 2019 and currently as the Vice chair of the Collaborative Working Group on Additive Manufacturing. She is co-hosting the 53rd CIRP Conference on Manufacturing Systems originally to be held in Chicago, now virtually from July 1 – 3, 2020 ((<https://cirp-cms2020.northwestern.edu/>))



Professor Bert LAUWERS receives the SME Eli Whitney Productivity Award. He is acknowledged with the Eli Whitney Productivity Award for his breakthrough research achievements in several novel disciplines of production engineering and for his innovative contributions to manufacturing engineering education

Prof. Lauwers obtained his master's degree in mechanical engineering (option manufacturing technology and production management in 1987) and a doctorate in 1993 from KU Leuven. Since 1993, Lauwers conducts research in the domain of advanced manufacturing processes (multi-axis milling, high-speed machining, electrical discharge machining, hybrid processes, machining of advanced materials) and computer support in manufacturing. He is active in several national and European research projects and strongly committed in collaboration with industry, both directly and indirectly through industry associations at the national and international levels. Since 2016, Lauwers has held the office of the dean of the Faculty of Engineering Technology at KU Leuven. He is involved in various professional societies or associations. Prof. Lauwers is also a fellow of SME.

Within CIRP, he served as secretary, vicechair and chair of STC E. He is currently the CIRP technical secretary and vice-president elect.



Professor Albert SHIH receives the SME Education Award. He is the recipient of the SME Education Award in recognition of his dedication and leadership in manufacturing education and workforce development.

Prof. A. Shih is a professor in Mechanical Engineering, Biomedical Engineering and Institute of Gerontology at the University of Michigan. He was a manufacturing engineer at Cummins (1991-98) and an associate professor at North Carolina State University (1998-2002). Prof. Shih joined the University of Michigan in 2003. In 2017, he served as the assistant director of education and workforce in the Advanced Manufacturing National Program Office. Prof. Shih is a pioneer in biomedical manufacturing. Prof. Shih is the recipient of the Fulbright Scholar, SME Frederick W. Taylor Research Medal, ASME Milton Shaw Manufacturing Research Medal and Blackall Machine Tool and Gage Award, SAE Ralph Teetor Educational Award. Shih is the editor of "Procedia Manufacturing" (Elsevier), president of the North American Manufacturing Research Institution (NAMRI | SME), and a fellow of ASME, SME and CIRP.

STC-G is Professor Shih's home STC. He is an active member in STC-C and STC-E.

CIRP Winter Meeting 2020

The annual Winter Meeting at "La Mutualité" meeting-centre in Paris has been attended by

- **207 members**
- **56 corporate members**
- **53 RAs**
- **27 guests**



The minutes from all the scientific meetings are available online.

<https://www.cirp.net/scientific-groups.html>

The Cross STC Meeting

(with input from J. Aurich and E. Lutters)

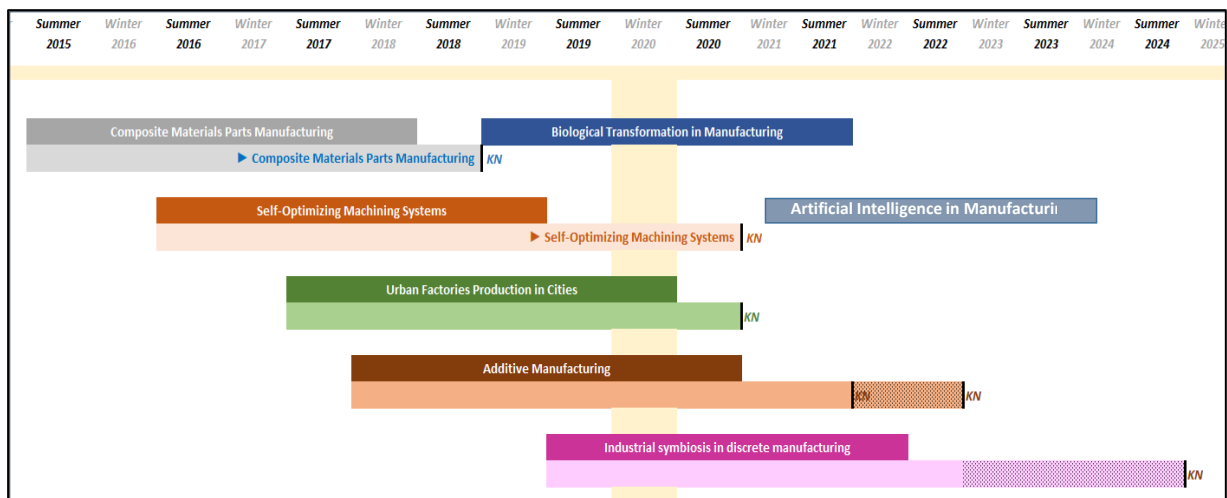
The Cross-STC Meeting was established in 2015 to provide time for information and discussions related to all STCs. Since then, two central tasks have been identified for the Cross-STC Meeting:

- Providing a forum to discuss new collaborative working groups (CWG) and proposing new CWGs to Liaison Committee; presentation of results of CWGs
- Proposal of new Cross-STC keynote papers to Liaison Committee; progress presentations discussion of Cross-STC keynote papers

The Cross-STC Meeting takes place at the CIRP Winter Meeting and during part II of the General Assemblies. It is open to all CIRP Members (Fellow, Associate, Corporate). Ideas for new CWGs and Cross-STC Keynote Papers can be proposed at each meeting and in case they receive sufficient support the group of initiators is asked to prepare a formal proposal at the next Cross-STC meeting where a formal vote is held. If the proposal received sufficient support, it is forwarded to the Liaison Committee in the same CIRP Meeting for the final decision.



Participation of CIRP members during Cross-STC meeting (voting on future collaborative working groups by simple hand rising)



Planning of past, running and future CWG's (and related keynotes) is depicted below. More details can also be found on

<https://www.cirp.net/scientific-groups/other-groups-and-committees-col-180/cwg-collaborative-working-groups.html>

With these procedures, STCs gained more time for their meetings as proposals for and reports of Collaborative Working Groups need not to be discussed numerous times in several STCs but have one place and one time slot during the CIRP Meetings. The same holds true for Cross-STC keynote papers, which need not be presented and approved in each participating STC but are processed in the Cross-STC Meeting. Cross-STC keynote papers must not necessarily be tied to a CWG but can also be proposed separately and will be proposed to Liaison Committee by the Cross-STC Meeting.

In addition, the Cross-STC Meeting provides time and space for other topics which need to be discussed between the STCs before being forwarded to Liaison Committee.

News from the CMAG Group

(by Dr. Makoto Fujishima - CMAG Chairman)

The CMAG Winter meeting was operated by new officers from this year. At the beginning of the meeting Professor Mitsuishi (CIRP President) addressed the meeting and shared that collaboration between academia and industry is important.

The concept of Industrial Technical Papers (ITP's) was explained by Professor Lauwers. Since corporate members are highly valuable for the CIRP community and encouraged to participate in the work of CIRP, ITP-papers are presented during the CMAG meetings (part 1 of the General Assembly). The submission, evaluation and publication process has been explained. So far ITP's were published in the JMST but from this year on published on the CIRP web site.



This year 6 papers have been submitted. Evaluation by the Editorial Committee resulted in 5 accepted papers and 2 additional papers transferred from the regular STC's, giving in total 7 papers to be presented during the ITP session of the CMAG meeting. Very unfortunately, there will be no General Assembly in this year. The papers will be introduced by video presentation. CIRP members and guests can listen/watch to the ITP papers similar to other STC papers.

Recently production style is being changed from mass production to variable production, therefore we focused on introducing industrial and academic activities to be utilized in order to increase the productivity of variable production. Six presentations were introduced at the CMAG meeting.

1. Siemens PLM by Dr. Fergani
Sinumerik ONE CNC control aims to have 30% productivity increase. Digital twin concept is the basis of their strategy to address this challenge of productivity increase.
2. Third wave system by Dr. Heigel
Cutting force and temperature are simulated and CNC program optimization can be executed by changing feed rate based on simulation result.
3. EIT manufacturing by Dr. Stavropoulos
A new Knowledge and Innovation Community (KIC) focusing on Added-Value Manufacturing. Actors in manufacturing are brought together for this vision. Robotics, Additive and other areas of manufacturing are in focus. Empower, Connect and Engage program are Education programs.
4. Tulip by Mr. Atkins
A digital app creates a continuous improvement. It can be used by connecting it to PLM/ERP/MES/CNC. App development can be done without writing code. Analytics Builder allows data analytics.

5. Application researches with industry at Keio University by Prof. Kakinuma
Directed energy deposition through collaboration with industry was presented. Anti-oxidation, Pore reduction, multiphase flow simulation and porous structure fabrication are areas of collaboration between DMG Mori and Keio University. DED using a special chamber proved to give better results than atmosphere regarding oxidation and strength, Education and Future career at Keio University is supported by Industry and Academia collaboration which helps to find good students.
6. Revitalizing Human-Machine Interaction by Dr. Nonaka of Hitachi
With further progress in the social implementation of IoT and AI, it is predicted that cognitive work and repetitive work will be replaced to machine process. And the labor structure will change further in both office workers and field workers. In this trend, experts from Japan and Germany discussed the future of human-machine interaction, and issued a discussion paper of German Academy of Science and Engineering (acatech).

Due to very active question and discussion, the planned presentation on Biologicalisation by Prof. Byrne was postponed to next CMAG meeting.

In 2020, the CMAG community counts 170 corporate members.



*Makoto Fujishima
Chair*



*Yavuz Murtezaoglu
Vicechair*



*Luis G. Uriarte
Secretary*

News from the Research Affiliates

(by Roy Damgrave, Vincent Wang and Pinar Bilge)

Words from the RA Steering Committee,

Dear Research Affiliates and CIRP Colleagues,

We are currently facing a situation in which global collaboration is completely relying on digital means. It shows us what is possible with all the online tools we have, but moreover it shows us how important it is to have physical meetings. Collaboration is one of the main goals of the Research Affiliates, and the many physical meetings we had contribute to the quality of our online meetings. Unfortunately, we cannot meet this year during the General Assembly, but we are planning an online meeting as replacement, so that our research and collaboration will continue.

During the winter meeting in Paris, we had a pleasant meeting with some good discussion on the activities of the RA's. In the welcome speech by the CIRP President, Prof. M. Mitsuishi, we were encouraged to continue the contribution to new research areas like Sustainability and Carbon Footprint Neutralization, together with other topics like IoT and Digitisation. Prof. B. Karpuschewski presented the CIRP Journal of Manufacturing Science & Technology (JMST) as the Editor-in-Chief. The RAs were invited to join the pool of reviewers, many of the RA's responded to our request to fill in the online form for this, but I would like to remind the RA's that haven't filled in the form to do so.

Further upcoming events this year are the next RA workshop that will be organized by Sébastien Campocasso (Universite De Toulon, France), and the CIRPe2020 Global Web Conference organized by Karel Kellens, Eleonora Ferraris and Eric Demeester.

We hope to meet you all at our online meeting (more information will follow) and at upcoming CIRP events. We hope you will enjoy your RA experience and the collaboration within the CIRP community



The RA-board - Roy Damgrave, Vincent Wang and Pinar Bilge

8th CIRPe Global Web Conference 2020

The 8th CIRPe Global Web Conference will be held on 14-16 October 2020 with the central theme 'Flexible Mass Customisation'. The conference chairs are Karel Kellens, Eleonora Ferraris and Eric Demeester, and the organizing institute is the Department of Mechanical Engineering, KU Leuven, Belgium. At the moment 90 papers are received, from 15 countries. The deadline for full paper was on June 15th.

More information can be found on www.cirpe2020.com or via cirpe2020@kuleuven.be

Lessons learned from previous CIRPe Global Web Conferences between 2013 and 2019

The RAs have gained some experience with web conferences since 2013. Based on this experience, RAs can provide support, if necessary in preparing templates for online sessions and instructions for presenters to upload the video presentations on the website.

For instance, the chair of the 27th Life Cycle Engineering Conference (LCE) 2020 has decided to setup a web-conference format because of the pandemic within a short time. During the setup of the new format, the chair of the CIRPe 2019 could share some information and assist the LCE chair.

For more information visit www.lce2020.fr , www.cirpe2019.com or www.cirpe2018.org

12th CIRP RA Workshop 2020

The 12th CIRP RA Workshop will be held online on July 6th and 7th afternoons (UTC+2). Indeed, due to the worldwide pandemic, this year's RA Workshop, initially planned in Toulon in the south of France, will be organised for the first time as an e-Workshop. We hope that the online format will allow a large participation to this event with lots of fruitful discussions.

The workshop will be organised around several scientific and technical sessions:

- One-minute pitches from the attendants to improve the future discussions;
- Presentation of the research activities on "Additive manufacturing" from the host laboratory of the University of Toulon;
- Presentation of the company CNIM located in La Seyne-sur-Mer (near Toulon) – whose visit was planned initially –;
- Thematic session lead by the following question: "How to contribute to environmentally sustainable global economic growth?".

During this session, invited experts will present the main challenges related to the environmental impact of production engineering. Then, the idea will to mainly focus the discussions on the actions that could be undertaken by non-experts to roughly evaluate the "sustainability" of their work and to collect and share valuable data for experts.

We are looking forward to welcoming you online in July.

Contact: Dr. Sébastien Campocasso: sebastien.campocasso@univ-tln.fr

Homepage: <http://cosmer.univ-tln.fr/en/12th-cirp-ra-workshop/>

13th CIRP RA Workshop 2021

The 2021 CIRP Research Affiliate Workshop will be held in summer 2021 at the University of Bath, Bath, United Kingdom. The workshop will be organised by Dr. Alborz Shokrani and Dr. Evripides Loukaides and will focus on Future Innovations in Manufacturing. Founded by the Romans as a thermal spa, it is a world-renowned tourist destination with many cafes and restaurants making it an ideal place to relax after the workshop. Bath is located in the South West of England which is an aerospace manufacturing hub of the UK with major aerospace companies such as Airbus, Rolls Royce, GKN Aerospace, Leonardo, etc. nearby.



New books from RA's

Digital Supply Networks

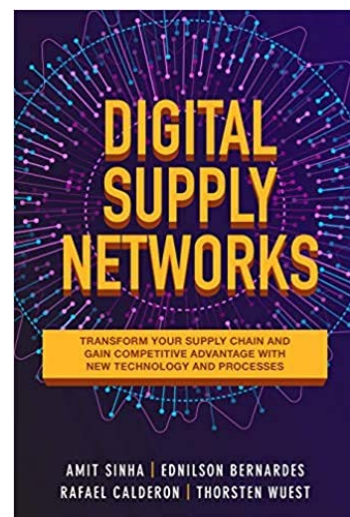
Amit Sinha, Ednilson Bernardes, Rafael Calderon, Thorsten Wuest

The upcoming book 'Digital Supply Networks: Transform Your Supply Chain and Gain Competitive Advantage with Disruptive Technology and Reimagined Processes' (McGraw- Hill, available July 2020) examines the impact new technology is having on supply chain management processes and practices. Drawing from real world-experience and problem-driven academic research, the authors provide an in-depth account of the move to digitally connected supply networks. They discuss the limitations of traditional supply chains and the underlying capabilities and potential of digitally-enabled supply flows.

The chapters are filled with expert insights and real-life use cases, consisting of an essential guide to developing digital supply networks for maximum competitive advantage. The book discusses the critical enabling technologies, provides guidance on their deployment, and illustrates their application in building the DSN capabilities.

The book is written in an accessible and non-technical format that will cater to a broad audience, including executives, managers, leaders, academics and students involved in or interested in developing a solid foundation on this topic. Professionals contemplating the journey or already in its midst will benefit from the insights.

The content applies to all business sectors and industries, with a particular focus on supply chain and manufacturing.



The number of RA's today

There are in total 83 RA's (March 2020). The following RA's ended their term: M. Fey, K. Kellens, B. Kirsch, A. Marzano, S. Rizzuti, L. Schönemann, R. Zhong, A. Atieh, J. Bauer, L. Denguir, S. Goel, U. Karagüzel, J. Owen, G. Michalos, X.Q. Zhang, N. Yussefian

Our CIRP Conferences

13th CIRP Conference on Intelligent Computation in Manufacturing Systems – CIRP ICME '19 (17 – 19 July 2019, Ischia (Gulf of Naples), Italy)

The 13th CIRP Conference on Intelligent Computation in Manufacturing Engineering (CIRP ICME '19), 17-19 July 2019, Ischia (Gulf of Naples), Italy, offered the opportunity to visit (or re-visit) the Green Island of Ischia in the Gulf of Naples, worldwide famous for its beauty and enchantment, that confirmed to be an ideal location to hold a conference such as the CIRP ICME '19.



R. Teti opens the CIRP ICME'19 Plenary Session



R. Teti recalls E. Merchant at the 1st CIRP ICME edition of 1998

The response to the 13th edition of the CIRP ICME Conference in terms of number of submitted papers and their quality has confirmed the widespread interest in Intelligent Computation in Manufacturing Engineering, covering the whole of production engineering research. The CIRP ICME '19 Conference has attracted more than 130 delegates with 2 keynote papers in the Plenary Session and 109 papers in the Technical Sessions presented by authors from 20 countries and 4 continents.

The topics dealt with ranged from Manufacturing Systems issues (System Modelling, Design, Planning and Control; Supply and Production Networks; Machine Tools; Flexibility, Sustainability, Reconfigurability and Complexity; Assembly Systems; Logistics Systems), to Product related matters (Product Life Cycle, Product Design and Product Service), to Manufacturing Technology aspects (Subtractive Manufacturing, Additive Manufacturing, Composite Materials Manufacturing, Welding, Forming, Metrology and Quality) as well as emerging issues such as Energy and Resource Efficiency, Intelligent and Digital Factory, Virtual and Augmented Reality, Service-Oriented Architecture, Cyber Physical Systems and Cloud Manufacturing within the Industry 4.0 framework.

Two Special Symposia were organised within the Conference relating to the Fraunhofer Think Tank Project "Biological Transformation in Manufacturing" (BioMANU II) and the International Workshop on Emergent Synthesis (IWES) in honour of its founder Prof. Kanji Ueda, Past President of the CIRP.

Through this wide range of research topics, the CIRP ICME Conference aimed at providing an international forum for the exchange of up-to-date knowledge information, experience, results

as well as the review of progress, discussions on the state-of-the-art and future trends in the various sectors of Advanced Manufacturing Technology and Systems.

Deep appreciation is due to the people and organisations that contributed to the realisation and success of the CIRP ICME '19 Conference: Prof. G. Levy for his Keynote presentation in the Plenary Session; Prof. N. Nishino and Prof. T. Takenaka for organizing and chairing of the IWES Symposium; Prof. K. Wegener for chairing the Biologicalisation Symposium, the members of the Organizing Committee: Prof. D. D'Addona, Dr. T. Segreto, Dr. A. Caggiano; finally, all the Session Chairmen for their efforts and management help.



*G. Levy and K. Wegener
CIRP ICME '19 reporting CIRP Fellows*



G. Levy during his KN presentation



*K. Wegener and R. Teti take a break in
Ischia*



R. Teti closes the CIRP ICME '19 Conference

Particular recognition is due to the International Academy for Production Engineering (CIRP), the main scientific sponsor of the CIRP ICME Conference Series; the University of Naples Federico II for its strong organisational support; and the co-sponsor of the event, the Fraunhofer Joint Laboratory of Excellence on Advanced Manufacturing Technology (Fh-J_LEAPT UniNaples) participating with representative from Germany and Italy.

4th CIRP Conference on BioManufacturing (12th - 15th Dec 2019, Guangzhou)

The 4th CIRP Conference on BioManufacturing (CIRP-BioM 2019) came to a successful close in Guangzhou from 12th to 15th December 2019. The Conference was co-organized by The Hong Kong Polytechnic University and Guangdong University of Technology. The CIRP-BioM is designed to be an international forum to discuss progress and future directions in biomanufacturing, and to facilitate the exchange of information on bio-inspired design, bio-fabrication, and bio-mechatronics. It included plenary speeches, oral presentations and posters from more than 100 fellow delegates from 13 different countries including China, United States, United Kingdom, Germany, Italy, Spain, Japan, Singapore, Australia, Mexico, South Africa, Ecuador and Malaysia.



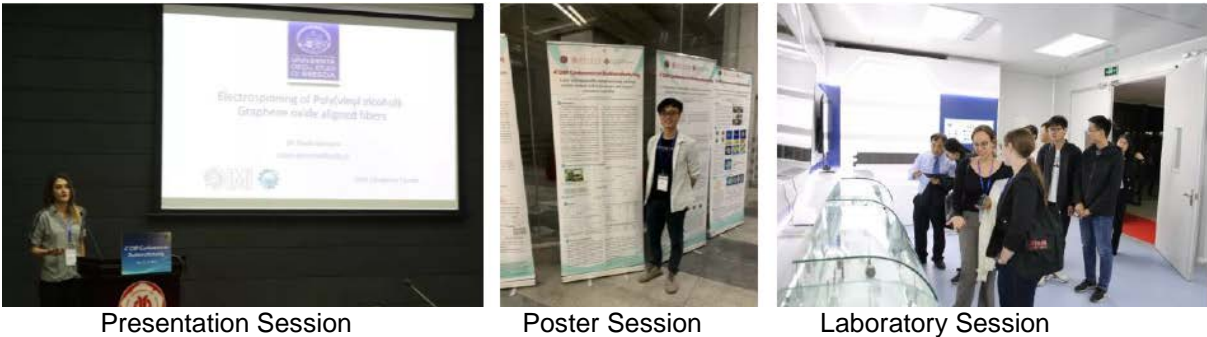
The opening ceremony of the conference was held in the Guangdong University of Technology, in the morning on 13th December 2019. The Conference Co-chairs, Professor Sandy To, the professor of Department of Industrial and Systems Engineering of The Hong Kong Polytechnic University and the associate head of State Key Laboratory of Ultra-precision Machining Technology (SKL-UPMT) and Professor Chengyong Wang, the vice president of Guangdong University of Technology delivered opening speeches, respectively.



29 distinguished researchers were invited to deliver plenary speeches with focus on the key issues and future development trends in the field of biomanufacturing. In the plenary sessions, Prof. David Weitz from Harvard University, Prof. Utkan Demirci from Stanford University, Prof. Dragos Axinte from University of Nottingham and speakers from Hong Kong, Mainland China, Taiwan, Singapore, Japan, Australia, United Kingdom and United States shared their insights and research findings.



More than 60 oral presentations and posters were made to present their latest research progress; ranging from biomechanics, biofabrication, biological additive manufacturing, biological manufacturing process and equipment, implantation/intervention/cutting instrument design and manufacturing, and nanopore biosensor and manufacturing & bio-inspired design and assembly. The Conference also organized a laboratory tour to the Institute of Manufacture Technology at the Guangdong University of Technology.



Presentation Session

Poster Session

Laboratory Session

The CIRP Conference on Biomanufacturing was held in China for the first time, which plays an important role in providing a platform for information exchange and discussion between China and other countries in the field of biomanufacturing.

Future CIRP Conferences

For the **most recent overview** of our coming CIRP conferences
go to “EVENTS” → [CIRP Conferences](#)

For the **most recent overview** of our coming CIRP sponsored conferences
go to “EVENTS” → [CIRP Sponsored Conferences](#)

This year the following CIRP Conferences have been/will be held online as E-Conferences:

CIRP 30th Design Conference
CIRP Life-Cycle Engineering Conference (LCE 2020)
CIRP Conference on Surface Integrity (CSI 2020)
CIRP Conference on Computer Aided Tolerancing (CAT 2020)
CIRP Manufacturing Systems (CMS 2020)
CIRP Conference on Intelligent Computation in Manufacturing Engineering (ICME 2020)
CIRP Conference on Photonic Technologies (LANE 2020)

The other CIRP Conferences and Sponsored Conferences have been postponed later in the year. Please look through the above links to see the new dates.

CIRP Keynote Papers

Our keynote papers are the result of an intensive collaboration between specialists working together during several years within an STC. They are important state of the art papers on important (new) technological areas. CIRP members who are willing to contribute are invited to contact the coordinator of each keynote paper.

2021 Keynote Papers proposals

STC A

Electronics Module Assembly - J. Franke (2) - Contact: Joerg.Franke@faps.fau.de

STC C

Structured and Textured Cutting Tool Surfaces for Machining Applications -

P. Mativenga (2), D. Biermann (1) - Contact: P.Mativenga@manchester.ac.uk

STC Dn

Co-evolution of digitalisation and Product Development Cycle - L. Roucoules (2) -

Contact: lionel.roucoules@ensam.eu

STC E

Ultrafast Laser Manufacturing: from physics to industrial applications - L. Orazi (2) -

Contact: leonardo.orazi@unimore.it

STC F

Forming of Metal-Based Composite Materials - S. Bruschi (1) -

Contact: stefania.bruschi@unipd.it

STC G

Grinding and finishing of automotive powertrain components - P. Krajnik (2) -

Contact: krajnik@chalmers.se

STC M

Noise and Vibration in Machine Tools - K. Wegener (1) et al. -

Contact: wegener@iwf.mavt.ethz.ch

STC O

Evolution and future of Manufacturing Systems - H. ElMaraghy (1) -

Contact: hae@uwindsor.ca

STC P

Scalability of Precision Design Principles for Machines and Instruments - J.A. Yagüe-

Fabra (2) et al. - Contact: jyague@unizar.es

STC S

Feature-based characterisation and applications - X. (Jane) Jiang (1) -

Contact: x.jiang@hud.ac.uk

2022 Keynote Papers proposals

STC A

Closed Loop Systems to Circular Economy: Staying within the Planetary Boundaries -

S. Kara (1) - Contact: S.Kara@unsw.edu.au

STC C

Process Monitoring of Machining - R. Teti (1) - Contact: roberto.teti@unina.it

STC Dn

Services-supported-by-Products Design Methods - D. Brissaud (1) -

Contact: daniel.brissaud@grenoble-inp.fr

STC E

Bioprinting: Materials, Processes and Applications - P. Bartolo (1) -

Contact: paulojorge.dasilvabartolo@manchester.ac.uk

STC F

Simulation of metal forming in a digitized era (sheet and bulk) - J. Yanagimoto (1) -

Contact: jun.52074.yanagimoto@cem.t.u-tokyo.ac.jp

STC G

Grinding tools and abrasives - A. Beaucamp (2) - Contact: beaucamp@me.kyoto-u.ac.jp

STC M

Mechanical Interfaces in Machine Tools - E. Budak (1) -

Contact: ebudak@sabanciuniv.edu

STC O

Daydreaming factories - A. Nassehi (2) - Contact: aydin.nassehi@bristol.ac.uk

STC P

Advances in performance and traceability of X-ray CT metrology - W. Dewulf (1) -

Contact: wim.dewulf@kuleuven.be

STC S

The implication and evaluation of geometrical imperfections on manufactured

surface - B. Mullany (1) - Contact: bamullan@uncc.edu

2023 Keynote Papers proposals

STC Dn

Bio-inspired Design Architectures for Advanced Products - A. Malshe (1) -

Contact: apm2@uark.edu

STC E

Digital Twin for Electro-Physical and Chemical Processes - Y. Guo (1) - Contact:

yuebin.guo@rutgers.edu

STC M

Sensor and Actuator integrated tooling systems - F. Bleicher (2) - Contact:

bleicher@ift.at

STC P

Gear metrology - An update - G. Goch (1) - Contact: fgoch@uncc.edu

2024 Keynote Papers proposals

STC M

Additive Machines - S. Smith (1) - Contact: smithss@ornl.gov

From the CIRP Office



Chantal Timar-Schubert

Annals papers/keynote papers submissions follow up, CIRP meetings, CIRP Website, candidatures for Membership, Internal Regulations and any internal information.



Agnès Chelet

Financial aspects: accountancy, membership fees, page charges, conferences sponsorships, Winter meetings registrations + Agendas & Minutes of the scientific meetings

News

- Information on the Video Paper Sessions - preparation, upload of the video, and Request for a guest - is available online on the page [August 2020 Video paper Sessions](#) (through the Menu "EVENTS").
- We kindly remind you that all categories of members can invite one guest from any country to view the recorded Video Paper Sessions. A fee of 100 € will be requested to Guests. The videos will be online during the week 24-28 August 2020 and will remain online up to the end of September.
- The video presentations and the discussions on the papers will be open in the Forum (Menu "Education") - you need to log in to get access.

Future CIRP Meetings

- Dates of the [future CIRP Winter Meetings](#) 2021 - 2025
- Dates of the [future CIRP General Assemblies](#) 2021 - 2023