



The International Academy for Production Engineering

NEWSLETTER

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From the President

Dear Colleagues,

It is a great pleasure and honor for me as President for 2024/25 to present to you in this editorial some of the topics that we, as the CIRP Board and Council, have taken up and are driving forward. But first, I would like to thank all those who see CIRP not just as a "paper academy" but as a "working academy", and who therefore actively contribute to the many CIRP projects in addition to the important publication activities.



Our academy sees itself as a leading organization in production technology. However, we all know that this self-image has to be constantly redefined and defended. To do this, we have to continuously question and readjust our professional commitment. In my view, the most important overarching element is that we promptly recognize the demands of our time, identify the necessary adjustments, and implement them prudently and vigorously. Moreover, our fundamental conviction that we are, and want to remain, a CIRP family with good and friendly ties across national borders is paramount. We accept the responsibility to ensure that these bonds also extend beyond CIRP, to our students, our own families and friends, and into our society.

A central concern of my presidency is to make our academy even more visible to the professional world, and also to the interested citizens of the world, under the motto "Open CIRP". We have already taken steps in this direction: A new and modern image video for our CIRP homepage has been created and uploaded, depicting our mission and achievements. We are in the process of setting up regular public relations activities to broaden our reach outside of CIRP, by expanding our media presence via the CIRP website and our LinkedIn channel. With new communication channels, we not only want to increase the visibility of our work, but also to inspire enthusiasm and support for our vision and goals from within and outside the CIRP community.

In my opinion, one of the most important overarching CIRP projects is our "Future Publishing" working group. Many of you will already be familiar with this activity. I am delighted with the goal-oriented, constructive, and friendly work of the colleagues involved here under the leadership of Sami Kara. They meet not only at our conferences in February and August, but also at short intervals in between through video conferences, including with Elsevier, and thus invest many additional working hours for our community. The aim of "Future Publishing" is to make the results of our research work available to a broader public. The guiding principles are to improve the timely and open dissemination of our scientific findings in order to promote the exchange of knowledge within our community, as well as across disciplines and outside our community. This will sustainably increase the reach and impact of our work. The work of the "Future Publishing" working group and their recommendations for

action will be discussed with the CIRP members at the upcoming Cross-STC meeting during the 2025 CIRP Winter meetings in Paris.

The quality of the CIRP Journal of Manufacturing Science and Technology (JMST) has continued to increase through the excellent efforts of the Editor-in-Chief Yusuf Altintas and his colleagues on the Editorial Board. As the President of CIRP, I express my sincere appreciation to Professor Altintas and all of our colleagues from the CIRP community serving as Associate Editors and members of the Editorial Review Board.

Another current working group under the leadership of Bert Lauwers is concerned with the promotion of diversity, which is a central pillar of our future strategy. For us, diversity not only means equity between women and men and increasing the proportion of female members within CIRP, but also the inclusion of scientists from different nations, cultures, and age groups. Diversity - in terms of disciplines, backgrounds and perspectives - is essential to succeed in the complex and fast-paced world of manufacturing technology. We want to open up CIRP to a wider range of talent, e.g., joining from emerging countries, to create an even more dynamic and innovative community. CIRP will allocate a part of its budget to support actions along this direction.

I am deeply convinced that the future of production technology depends to a large extent on how well we, as a community find, promote, and network talent. That is why the promotion of young researchers must be a focus of our work. The CIRP School was initiated by our Past President Prof. Fengzhou Fang and a related taskforce was created and chaired by Dr. Alessandro Balsamo. The CIRP School was intended to help integrate the best young minds into our network and strengthen the exchange between students, researchers, and industry pioneers. Complementary to this initiative, during his Presidency my predecessor Prof. Fengzhou Fang also established a Manufacturing Engineering Task Force (METF), which has worked laboriously to update the CIRP Manufacturing Engineering curriculum. This curriculum is now available on the CIRP website, and a report of the activities of the METF is featured in this newsletter.

The CIRP Council believes that our Research Affiliate (RA) program should continue to play an important role. We observe that young scientists have been well-connected with CIRP and the production sciences through this program, and thus remain engaged with our academy and its goals even after leaving as an RA as they continue to be active in their field of specialization. Based on these clearly positive experiences, as President, I look forward to further strengthening CIRP's RA program as a means of attracting young scientists to our academy, and providing our RAs with new opportunities to contribute to the work of CIRP and the field of production engineering.

Now to the core topic, the joint advancement of research and innovation in production technology, in line with the sustainability goals of our academy, among other things. I am delighted with the creativity and targeted scientific work of our members, in some cases together with our corporate members.

In recent years, for example, we have made considerable progress in the **modeling and simulation** of systems and processes, in particular through the development of digital twins and their mutual communication with real production systems. Recently, we have been able to devote ourselves to the application of **artificial intelligence** as an integral part of our scientific work. This includes big data analysis, machine learning,

and intelligent production systems, which enable us to gain new insights from the collected data and increase efficiency in production, while mitigating the environmental impact. Production processes that are based on real-time data and which continuously improve themselves are certainly the future. In my opinion, **connectivity and security** are becoming increasingly important. The increasing networking of cyber-physical systems within entire production systems as well as data security will be crucial for the long-term success of production companies, in order to accomplish their on-going digitalization effectively and securely.

However, we should also not neglect research into **innovative manufacturing technologies**. I am always amazed at the great progress that is still possible, even after many years of research. The use of new materials and innovative methods can increase our resource efficiency and reduce our ecological footprint. As such, **nanotechnology** offers numerous advantages, from increased strength to improved material functionality. And, **life science technologies** are becoming increasingly relevant. In my opinion, concepts such as the biologicalization of production and the development of biosensors and bioactuators are fascinating approaches that use nature as a model to make processes more efficient and sustainable.

Dear readers of this newsletter, dear CIRP members! Together, we have the opportunity to advance CIRP, our scientific field, and the companies associated with it. I look forward to working with all of you to successfully master the tasks ahead. I would like to thank the CIRP community for their tireless work and commitment; the members of the Board, Council, Senate, CIRP's committees, working groups, our Paris CIRP office, our academic and corporate members, our Research Affiliates, and especially my predecessor Professor Fengzhou Fang, who led our academy with diligence, exemplary leadership, and positive energy during his presidency in 2023-2024.

Last but not least, let me acknowledge Ms. Chantal Timar-Schubert, the Assistant Secretary General of our academy. Since 1996, Chantal has been supporting our meetings, our website, the CIRP Annals, all of the administrative and scientific committees of CIRP, our members and RAs, with her wealth of knowledge and superb management. For so many of us, Chantal has become the heart and soul of CIRP. After the 2025 winter meetings, she will start enjoying a very well-deserved retirement. However, I'm thrilled that Chantal will also join us as a guest at the 2025 GA in Stockholm, during which we will celebrate her contributions to CIRP.

Succeeding Chantal, I would like to welcome Ms. Violaine Baudin who recently joined the CIRP office, and will be working alongside Ms. Agnès Chelet.

The year 2024 has passed far too quickly, and so, almost surprisingly for me we have reached the New Year 2025. On behalf of the CIRP Board, the Council and our Paris Office, I wish you and your families a successful, healthy, happy, and peaceful 2025!

I look forward to our next face-to-face meeting in Paris in February 2025!

With best regards,
Berend Denkena
President of CIRP 2024-2025

From the Editor

Dear CIRP colleagues,



Once again, warm greetings from Canada! It is an honor to connect with you via the CIRP Newsletter. It was a treat to see so many friends and colleagues during the CIRP 2024 General Assembly in Thessaloniki. We now look forward to our next gathering for scientific discussions and exchange of ideas at the upcoming 2025 Winter Meetings in Paris.

As the Editor of the CIRP Newsletter, I invite all members to submit their news relevant to our academy (e.g., news from members, awards, books written by members, etc.). Organizers of CIRP conferences are also asked to send a brief report (with highlights, pictures, etc.), to be featured in the Newsletter. The material can be sent to the CIRP office (cirp@cirp.net) or directly to myself (kaane@uwaterloo.ca).

With my best regards,

Kaan Erkorkmaz
CIRP Technical Secretary

News from Members

Professor Sung-Hoon Ahn appointed President of the Korean Society for Precision Engineering



Professor Sung-Hoon Ahn, a CIRP Fellow and faculty member at Seoul National University, has officially assumed the presidency of the Korean Society for Precision Engineering (KSPE) as of January 1, 2025.

KSPE is dedicated to advancing the field of precision engineering in Korea by fostering innovation and contributing to the public good through the development of knowledge and technologies. With over 4,000 members, the society publishes four academic journals and organizes the annual International Conference on Precision Engineering and Sustainable Manufacturing (PRESM).

Professor Ahn's research spans a wide range of cutting-edge topics, including smart factories, smart grids, smart materials, sensors, robotics, additive manufacturing, and sustainable manufacturing. His pioneering work has earned him numerous accolades, such as the Sinyang Engineering Award, Gaheon Award, Seoul National University Education Award, LG Yonam International Visiting Fellowship, the Presidential Commendation of Korea, Samil Cultural Award, and Fellow of the Korean Academy of Science and Technology.

Notably, he served as the founding Editor-in-Chief of the International Journal of Precision Engineering and Manufacturing - Green Technology. Currently, Professor Ahn holds key positions outside academia, including serving as an Outside Director on the board of Hyundai WIA and as a consulting professor for Samsung SDI.

Within CIRP, Professor Ahn actively contributes to STC S and STC E.

Prof. Jian Cao and Prof. Mamoru Mitsuishi shared the honor of the 2024 Hideo Hanafusa Outstanding Investigator Award

Prof. Jian Cao and Prof. Mamoru Mitsuishi received the Hideo Hanafusa Outstanding Investigator Award at the 2024 International Symposium on Flexible Automation, held in Seattle, July 2024. The award, established in 2000 and awarded once every two years, is to recognize individual who has made significant contributions to the field of flexible automation.

The citation for Prof. Jian Cao's award is "For contribution to the development of novel flexible manufacturing processes and control methods based on fundamental understanding and effective modeling of material behavior and process mechanisms." Cao said at the award ceremony "It is my great honor to share this award with Prof. Mitsuishi, a long-term colleague and friend."



The citation for Prof. Mamoru Mitsuishi is "For realization of intelligent machine tools which determine machining state in real-time performing adaptive and learning control, and actively compensating for thermal deformation and application of engineering knowledge to the medical field."

Cardiss Collins Professor Jian Cao (MIT'95, MIT'92, SJTU'89) specialized in innovative manufacturing processes and systems, particularly in the areas of deformation-based processes and laser additive manufacturing processes. Prof. Cao is an elected member of the National Academy of Engineering (NAE) and of the American Academy of Arts and Sciences (AAA&S). She is the Founding Director of the research center on

Manufacturing Science and Innovation at Northwestern, known as NIMSI. Cao was the Editor-in-Chief of Journal of Materials Processing Technology, now on the editorial board of the CIRP Annals. Her major awards include DoD Vannevar Bush Faculty Fellowship, ASME Ted Belytschko Applied Mechanics Award, the inaugural ASME Devor-Kapoor Manufacturing Medal, ASME Milton C. Shaw Manufacturing Research Medal, Charles Russ Richards Memorial Award from ASME and Pi Tau Sigma, SME Gold Medal, and SME Frederick W. Taylor Research Medal. Prof. Cao now serves as an Associate Vice President for Research at Northwestern, a member of the National Materials and Manufacturing Board of the National Academies, Board of Directors of SME, and Board of mHUB – accelerator for HardTech innovation and manufacturing in Chicago.

Professor Mamoru Mitsuishi graduated from the University of Tokyo in 1979 with a Bachelor of Science in Physics. Following this, he earned a second bachelor's degree in Mechanical Engineering in 1981. He received his Master's and doctorate degrees in 1983 and 1986, respectively, from the University of Tokyo, after which he joined the university's School of Engineering as an academic staff. He became Professor in 1999. Professor Mitsuishi was the Dean of the School of Engineering from 2014 to 2017, and between 2017 and 2021 he was appointed as an Executive Director and Vice President of the University of Tokyo. Professor Mitsuishi retired from the University of Tokyo at the end of March 2022 and was awarded the title of Professor Emeritus in June. He is now working as a Vice President at NIAD-QE: National Institution for Academic Degrees and Quality Enhancement of Higher Education, as well as at two private universities, Waseda University and Teikyo University as a Guest Professor and a Specially Appointed Professor, respectively. He was elected as the President of the Science Council of Japan in 2023. His areas of interest are biomedical robotics and manufacturing systems. Prof. Mitsuishi served as the President of CIRP from 2019 to 2021 and is an Honorary Fellow of CIRP.

Professor Adam Clare elected Fellow of the Royal Academy of Engineering



UBC Mechanical Engineering faculty member Professor Adam Thomas Clare has been elected Fellow of the United Kingdom's prestigious Royal Academy of Engineering, one of 71 new members recognized for "outstanding and continuing contributions to the profession." The Royal Academy of Engineering brings together a community of experts in their field to provide leadership in engineering and technology in the UK, as well as expert advice to the UK government, supporting research and entrepreneurship through funding, policy and resources, and education.

Previously a Professor at the University of Nottingham, Dr. Clare held a Research Chair from the Royal Academy of Engineering, and was the Deputy Director of the Rolls-Royce University Technology Centre. At the University of British Columbia, he is the Associate Program Director of Manufacturing Engineering, an undergraduate program jointly run by the departments of Mechanical Engineering and Materials Engineering. Prof. Clare's research focuses on developing manufacturing technologies and approaches for a sustainable future, investigating additive manufacturing, electrical discharge machining, electrolyte jet machining, electron beam and laser processes, stochastics in engineering design and manufacture, as well as manufacturing for high value and high integrity applications like aerospace, biomedical, tool, and nuclear.

Prof. Clare is a Fellow of CIRP and currently serves as the Vice Chair of the CIRP's STC E, which studies electro-physical, chemical, laser, and related additive manufacturing processes.

Prof. Clare was formally admitted as a Fellow in a ceremony, during which the new members sign the roll book and join the almost 1700 existing Fellows of the Academy.

<https://mech.ubc.ca/2024/09/18/adam-clare-fellow-of-the-royal-academy-of-engineering/>

General Assembly 2024

The 73rd CIRP General Assembly (GA) was held in Thessaloniki, Greece, and was successfully managed by the organizing team, chaired by Prof. Nikos Michailidis from Aristoteles University.

Spread over seven days, the GA was attended by 573 participants, including 230 Members, 76 Corporate members, 29 Research Affiliates, 167 Guests and 71 Accompanying persons. The GA featured 11 Keynote papers, and 114 research paper sessions.

The participants enjoyed not only intensive scientific exchanges and The and networking opportunities, but were also treated to Greek culture, cuisine, music, and hospitality.







CIRP Presidents Prof. Berend Denkena (2024-25) and Prof. Fengzhou Fang (2023-24)



Comments from the GA participants:

- *“Thanks a lot for your tremendous efforts to make CIRP GA an unforgettable event for us. It was really great to be in Thessaloniki and intensify the contacts we have within CIRP. All the scientific and social events as well as the sites and the city were well organized within a quite short time of preparation!”*
- *“Thank you for the excellent organization in this nice city with warm and friendly people.”*
- *“It was a great and memorable General Assembly, Many thanks!”*
- *“Our stay in Thessaloniki during GA, and a few days more, was excellent. We are very satisfied and looking for another opportunity to visit again Thessaloniki.”*
- *“Many thanks for your great work and organization! All was fine!”*
- *“Future organizers should do as great as Team Greece did this year!”*
- *“The Event app is a great addition.”*



Big thanks to the assisting team!

CIRP Awards

The **F.W. Taylor Medal for 2024** has been awarded to **Dr. Kotaro Mori**, Program-Specific Assistant Professor at Kyoto University, Japan, for his paper: “Vision-based volumetric displacement measurement with a self-illuminating target”.



Dr. Kotaro Mori and the President of CIRP Prof. Fengzhou Fang during the presentation of the F.W. Taylor Medal at the Opening Ceremony of the 2024 General Assembly.

Dr. Mori presented this paper during the STC-M session of the CIRP General Assembly in Dublin in 2023. The paper was co-authored with Prof. Daisuke Kono and Prof. Atsushi Matsubara from Kyoto University.

We sincerely congratulate Dr. Kotaro Mori on his outstanding scientific work, which has been recognized by the CIRP F.W. Taylor Medal.



Elections approved at the General Assembly Meeting 2024

2024-2025 Board and Council members

President	Prof. B. Denkena
Vice President	Dr. A. Balsamo
Vice President Elect	Prof. S. Kara
Past President	Prof. F. Fang
Secretary General Treasurer	Prof. D. Dumur
Technical Secretary	Prof. K. Erkorkmaz

Council Members	Prof. D. Biermann
	Prof. E. Budak
	Prof. A. Matsubara
	Prof. B. Mullany
	Prof. J. Sutherland
	Prof. J. Vancza

Elected Fellows

- Prof. F. Bleicher (Austria)
- Prof. B. Cheung (Hong Kong, China)
- Prof. T. Enomoto (Japan)
- Prof. B. Kinsey (USA)
- Prof. P. Krajnik (Croatia)
- Prof. S. Park (Canada)
- Prof. T. Sakao (Sweden)
- Prof. R. Schmitt (Germany)
- Prof. V. Schulze (Germany)
- Prof. J. Yan (Japan)

New Associate Members

- Prof. F. Ansari (Austria)
- Prof. Y. Kajihara (Japan)
- Dr. K. Mori (Japan)
- Dr. U. Mutilba (Spain)
- Prof. A. Raatz (Germany)
- Prof. M. Weigold (Germany)
- Prof. C. Yuan (USA)
- Prof. W. Zhu (China)
- Prof. F. Ducobu (Belgium)
- Prof. M. Khraisheh (Qatar)
- Dr. K. Muszka (Poland)
- Assoc. Prof. C. Nielsen (Denmark)
- Prof. B. Schleich (Germany)
- Prof. Y. Yan (China)
- Dr. P. Zheng (Hong Kong, China)

Fellows Emeritus

- Prof. H. ElMaraghy (Canada)
- Prof. A. Bruzzone (Italy)
- Prof. S. Hinduja (UK)
- Prof. M. Nakao (Japan)
- Prof. W. Grzesik (Poland)
- Prof. J. Jedrzejewski (Poland)

- Prof. R. Neugebauer (Germany)
- Prof. M. Pietrzyk (Poland)
- Prof. J. Oliveira (Brazil)
- Prof. D. Whitehouse (UK)

New Corporate Members

- BlueForge Alliance (USA)
- DMG Mori (Germany)
- EIT Manufacturing CLC South East (Greece)
- Ford Motor Company (UK)
- Fraunhofer Austria Research (Austria)
- GE Aerospace (USA)
- Gemineers (Germany)
- Grundfos (Denmark)
- Kashifuji Works (Japan)
- Manus Software (Turkey)
- Moore Nanotechnology Systems (USA)
- Richemont International (Switzerland)
- Steinbeis-Transferzentrum NovaGrind (Germany)
- Swissmem (Switzerland)

New Research Affiliates

- Dr. D. Bartels (Germany)
- Ass. Prof. N. Chen (China)
- Prof. Y.H. Chueh (Taiwan)
- Dr. S. Gondo (Japan)
- Ass. Prof. A. Hrechuk (Sweden)
- Dr. M. Kipp (Germany)
- Dr. M. Klar (Germany)
- Dr. S. Kopp (Germany)
- Dr. L. Langenhorst (Germany)
- Prof. H. Liu (China)
- Dr. Q. Liu (UK)
- Dr. M. May (Germany)
- Dr. H. Merschroth (Germany)
- Ass. Prof. R.H. Namlu (Turkey)
- Dr. A. Pellegrini (Italy)
- Dr. Y. Qie (France)
- Dr. F. Tehranizadeh (Turkey)
- Dr. F. Viprey (France)
- Assoc. Prof. B. Vrancken (Belgium)
- Dr. K. Xu (China)

New STC Officers

- STC G: Prof. C. Heinzl (Ch), Prof. E. Da Silva (V-Ch), Prof. P. Krajnik (Sec)
 STC M: Prof. M. Záh (Ch), Prof. K. Erkorkmaz (V-Ch), Prof. H.-C. Möhring (Sec)

From the Editorial Committee

(by J. Váncza, EC Chair)



At the Thessaloniki General Assembly in August 2024, the Chair of the Editorial Committee Sami Kara completed his term. We all owe a great deal to his dynamism and his most kind and also principled leadership. We sincerely thank him for eight years of service to the EC, during a period when the introduction and consolidation of a professional review process could go hand in hand with keeping high and alive the traditional CIRP ethos of scientific quality, collegiality, and friendship.

This year, we had a number of changes in the Editorial Committee. Together with Sami Kara, our colleagues Kaan Erkokmaz, Jane Xiangqian Jiang, and Rachid M'Saoubi left the Editorial Committee, while new members Erhan Budak, Alkan Donmez, Hans Nørgaard Hansen and Jörg Krüger entered. We are grateful for the contributions of colleagues who have left and warmly welcome our new members. Matt Davies stepped in as the new Vice Chair of the Editorial Committee, and I am looking forward to a fruitful joint work with him.

The 2025 submission and review process

In CIRP we have discussed, time and again, the possibilities of increasing the impact of our scientific publications. Now, following the decision of the Council, the length of standard submissions has been increased to four pages for the body of the paper plus half a page for references. Please consult the instructions for authors for all details.

The 2025 paper submission and review process will be managed completely through the Elsevier Editorial Manager System, which provided in the earlier years well-proven, efficient, and transparent services for the handling and publication of our papers in the Annals. The paper review process is already underway, as the review schedule of the keynotes has been changed. Keynote authors will now receive the first review comments in January, so that we can handle the first revisions just before the 2025 Winter Meeting and publish the keynotes earlier, in mid-July of 2025.

CIRP Annals publications

The CIRP Annals authorship rules have not been changed. Hence, please submit the completed CRediT form together with your manuscript. Authorship and contributions are the responsibility of the lead authors. The corresponding author is responsible for ensuring that the descriptions are accurate and agreed by all authors. In the case of keynote papers, the CRediT form is a live document that needs to be updated whenever there is a change in the authorship or the authors' contributions. For sponsored papers and cooperative works, we will also need your certificate of sponsorship and request form for cooperative work, respectively.

Finally, this year we are soliciting papers for the 74th volume of the CIRP Annals. As always, we invite all members of the CIRP community to continue submitting their very best new scientific work in production engineering to the CIRP Annals, the flagship publication of our academy. I am confident that all colleagues in the STCs and the EC

will do their best when reviewing and selecting the papers for our 74th General Assembly, to be held in Stockholm during August 2025.

From the Corporate Members Advisory Group (CMAG)



Dr. Yavuz Murtezaoglu
Chair



Dr. Luis Uriarte
Vice-Chair



Dr. Youichi Nonaka
Secretary

The Corporate Members Advisory Group (CMAG) meeting took place at the General Assembly in Thessaloniki on August 20th. The first part of the meeting featured three CIRP Industrial Technical Papers (ITPs):

1. Logistic regression for the likelihood prediction of tool breakage in turning of a titanium alloy – the potential of industrial data
by Ms. Lena Geissel (MTU Aero Engines AG)
2. Development of standardised test methods to evaluate the abrasive wear resistance of PCD cutting tools
by Dr. Thomas Childerhouse (Element Six Ltd, UK, Global Innovation Centre)
3. Synthetic data generation for flank wear segmentation on cutting tool images by neural networks
by Dr. Raoul Roth (RhySearch Forschung und Innovationzentrum Rheintal, Switzerland)

Afterwards, Prof. Fang (CIRP President) welcomed the CMAG members and local industry representatives. This was followed by the introduction of new corporate members who had joined CIRP during 2024. Fraunhofer Austria Research and Mitutoyo have presented their organizations.

Prof. Li-hui Wang, KTH, Chair of the 74th General Assembly in Stockholm, made a short talk about the next General Assembly and requested sponsorships to CMAG members.

Prof. Sami Kara, Chair of CWG for Sustainability, made a short talk about a request for CMAG members to respond to a questionnaire about their sustainability-related measures. If companies had not implemented any relevant measures, they were asked to provide reasons why they had not done so. Dr. Murtezaoglu, CMAG Chair, put a

comment that next CMAG meeting in the CIRP Winter Meeting 2025 will provide a session to evaluate the results.



The meeting continued with four technical presentations:

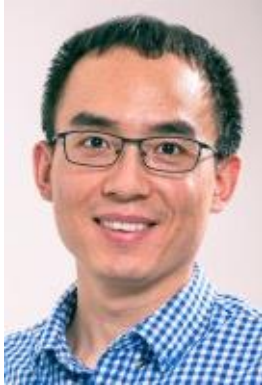
1. Metrology Solutions for Advanced Optical Manufacturing
by Mr. Kazuhiko Hidaka, Mitutoyo
2. Manufacturing methods for ultra-precision applications
by Dr. Sinan Badrawy, Moore Nanotechnology Systems
3. Harnessing the power of disruptive innovation and best practices for industry / start-up collaborations
by Dr. Tim Eichner, Hexagon
4. A comprehensive approach for evaluating machining system performance in the automotive industry using artefacts
by Mr. Vilhelm Söderberg, Volvo Group Trucks Operations



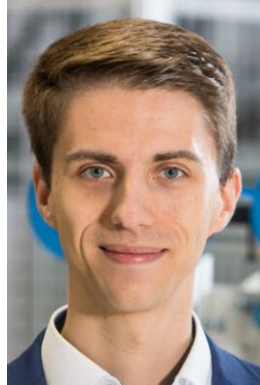
The CMAG Officers encourage contributions from CMAG members, particularly on the topics of sustainability, digital twins and case studies about collaborations with startups. Dr. Murtezaoglu introduced the next CMAG meeting, which will be held during the CIRP Winter Meetings in, Paris, France during February 2025.

From the Research Affiliates

Message from the RA Steering Committee



Prof. Nanya Li
Chair



Dr. Benjamin Montavon
Vice-Chair



Prof. Haizea Gonzalez
Barrio, Secretary

Dear Research Affiliates, dear CIRP Colleagues,

It was great to be able to meet and interact with colleagues and friends at the CIRP 2024 CIRP General Assembly in Thessaloniki, Greece and on many other occasions as the CIRPe conference and the RA Workshop. This network initiated cooperative works and publications, also taking the new CIRP Novel Topics in Production Engineering format. Another focus was joint review papers and the collaborative use of internationally exceptional lab equipment.



2024 RA meeting at the General Assembly in Thessaloniki, Greece.

The RA meeting in Thessaloniki was held with 30 attendees and gave opportunity to new RAs to introduce themselves. The RA board reported after a short opening and the approval of the agenda, followed by reports on the CIRP RA workshops, CIRPe conferences, and RA collaborating working groups. The RA steering committee also had a report to the CIRP office. Starting from now, the subsequent elections of a new RA Steering committee are scheduled in the CIRP GA in August to be aligned with the

RA nominations. Another item of the discussion were proposals to help further CIRP's equity, diversity, and inclusion (EDI) agenda. The RAs also appreciated the opportunity to discuss their views on outreach and visibility of CIRP with the CIRP Office.

Before closing the meeting, the new RA Steering committee was unanimously elected Prof. Nanya Li as the RA Chairman, Dr. Benjamin Montavon as the RA Vice-Chairman, and Prof. Haizea Gonzalez Barrio as the RA Secretary. The new steering committee looks forward to further developing the network and pushing its synergies forward.

The RA Steering Committee.

16th CIRP RA Workshop 2024

The 2024 RA Workshop hosted by Kyoto University, Japan, from July 1-4 brought together international expertise in a highly productive event. Organized by Dr. Kotaro Mori, Dr. Shuntaro Yamato, Dr. Daisuke Kono, and Prof. Atsushi Matsubara, the workshop featured 11 participants from Germany, the UK, Sweden, Italy, Spain, and China. Sponsored by DMG MORI, the event included insightful keynote speeches from Prof. Matsubara and Prof. Takaya. Participants had the unique opportunity to visit prestigious institutions such as Kyoto University, DMG MORI's IGA campus, FANUC Headquarters, and Mitutoyo's Utsunomiya Plants. All participants also enjoyed the Japanese culture and the exceptional hospitality of the hosts.



Photo of RAs in front of the DMG MORI IGA campus.

Save the date for the 17th CIRP RA Workshop 2025

Dr. Sadeghi Tabar presented an update of his proposal for the RA Workshop **2025 to be hosted by Chalmers University of Technology** in Sweden with the support of Dr. Malakizadi, Prof. Peter Krajnik, and Prof. Rikard Söderberg. The workshop is planned to be after the CIRP GA in Stockholm. The preliminary program was scheduled and included the visit of local companies. **The proposal has been approved with full votes.**

12th CIRPe Global Web Conference 2024



The highly anticipated 12th CIRPe Global Web Conference took place on **October 22-23, 2024**.

Key highlights include:

- **38 accepted papers**, with fully registered and confirmed presenters.
- **5 keynote speakers** from both academia and industry, bringing insights into the latest advancements.
- **5 exciting session themes:** Precision Engineering, Digital Manufacturing, Additive Manufacturing, Manufacturing Systems, and Sustainable Manufacturing.

This online event facilitated cutting-edge discussions in manufacturing and engineering.

Save the date: 13th CIRPe Global Web Conference 2025

The tentative theme is “AI in Smart Manufacturing”, and the tentative dates are October 16-18, 2025. Several symposia will be planned and offer RAs the chance to become chairs for each symposium.

RA activities: CIRP UK meeting 2024

The CIRP UK meeting 2024 was hosted by the High-Value Manufacturing Group of the School of Engineering, Cardiff University, on 23-24 May 2024. **Dr Debajyoti Bhaduri (RA)** coordinated the organization of the meeting. The first day of the meeting was dedicated to technical presentations and a laboratory tour. Around 45 delegates from industry and academia attended the Day 1 meeting. The second day involved the CIRP UK Annual General Meeting.

Awards

Dr. **Mahmoud Hassan** received the National Research Council Canada (NRC) Rising Star Award at the NRC’s 2024 Outstanding Achievement Awards (OAAs). The NRC Rising Star Award recognizes an individual who, during their formative years with the NRC, has contributed far beyond expectations and who exemplifies NRC Values. This award is intended to recognize excellence in research.

2024 CIRP Manufacturing Engineering Curriculum Development



Prof. Fengzhou Fang



Prof. Wei Gao

Promoting manufacturing engineering research is one of the strategic missions of CIRP. It is also a pivotal task for CIRP to cultivate future manufacturing engineering talent to contribute to environmentally sustainable global prosperity and the well-being of society. The 2017 CIRP Manufacturing Engineering Curriculum for Undergraduate Students has served as a reference and guide for universities worldwide planning to develop their own manufacturing curriculum.

In recognition of the urgent demand for digitalization of industry, and future research and educational needs in digital manufacturing and engineering, sustainable manufacturing, nanomanufacturing, atomic and close-to-atomic scale manufacturing, a new Manufacturing Engineering Task Force (METF) was initiated by Professor Fengzhou Fang during his CIRP presidency, and approved by the Council in September 2023 with a mission to update the 2017 CIRP Manufacturing Engineering Curriculum for Undergraduate Students and also to propose new Curriculum for Master's Course Students.

The members of METF are Wei Gao (Japan), Nabil Anwer (France), Xichun Luo (UK), Daniel Meyer (Germany), Fei Tao (China), Adam Clare (Canada) and Guido Tosello (Denmark). The following three tasks and executive teams were set for the Task Force:

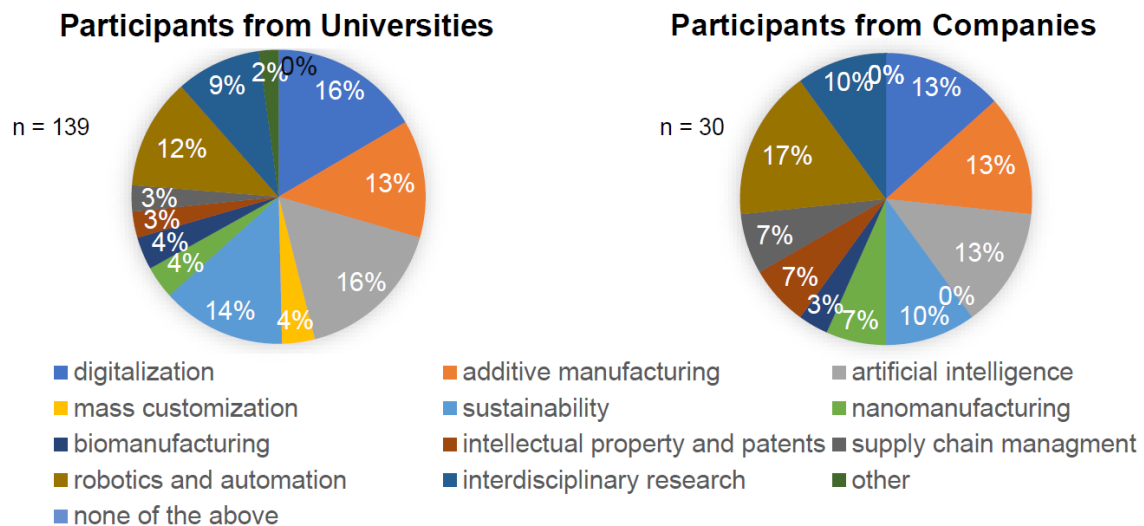
- Surveying requests and ideas from universities and industries for the CIRP curriculum (Daniel Meyer, Fei Tao).
- Updating the 2017 CIRP Curriculum for Undergraduate Course (Wei Gao, Xichun Luo).
- Establishing a new CIRP curriculum for Master's level Course (Nabil Anwer, Adam Clare, Guido Tosello).

A survey was prepared and sent to CIRP members in November 2023 to collect general information, relevance of teaching, preferences in teaching, and observed developments in manufacturing teaching. Responses were received in December 2023, followed by an analysis work conducted by Daniel Meyer and Fei Tao with the help of Dr. Yi Li, a CIRP Research Affiliate. A report was prepared and proposed to the Task Force by the team in January 2024, which was accepted by the Task Force and

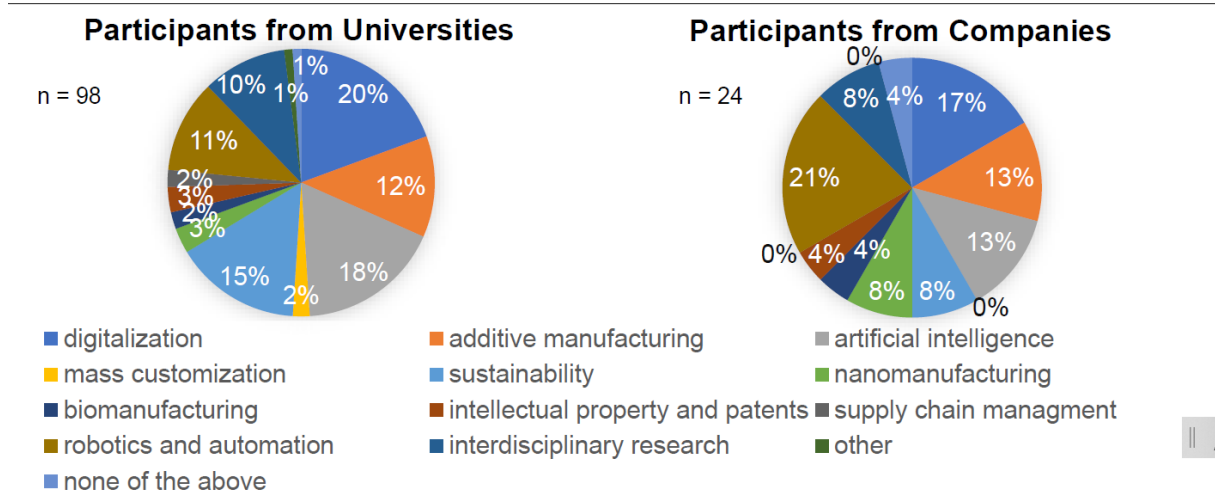
used as a basis for the subsequent work of updating and establishing the curriculums. The following are some main points of the survey results:

- Nearly 50% of the survey participants were aware of the 2017 CIRP Manufacturing Engineering Curriculum.
- The participants indicated the high relevance of emerging topics and the importance of balanced teaching programs with a view to contents from fundamentals and industrial applications.
- More than two-thirds of the participants experienced differences in the quality of education when comparing graduates from different universities, and they attribute this to the curriculum of different universities.
- The topics most frequently named as emerging were digitalization, artificial intelligence, sustainability, and additive manufacturing.

In the last five years, the following topics became more relevant in my daily working life



In the last five years, the curriculum at the universities with which I am associated has changed to place more emphasis on the following topics



Updates on the 2017 CIRP Curriculum for Undergraduate Course was led by Xichun Luo with the assistance of Wei Gao. A draft of the 2024 CIRP Curriculum for Undergraduate Course was proposed to the Task Force in February 2024. The major updates are as follows:

- Adding contents on “Introduction to Quantum Mechanics and Photonics for Engineers” to a Year 1 Module, “MANU124 Introductory Physics for Engineers II.”
- Adding “Python” as a computer programming skill in a Year 1 Module, “MANU127 C/C++/JAVA Programming”.
- Changing the title of a Year 2 Module, MANU 215 from “Technical Communication” to “Technical Communication and Data Analytics” and adding contents of introduction to Data Analytics, Digital Twins and Artificial Intelligence.
- Adding contents on “Introduction to Micro and Nanomanufacturing and Three Manufacturing Paradigms” in a Year 4 Module “MANU414 Precision Engineering.”
- Adding “Case Studies for Sustainable Manufacturing” in a Year 4 Module, “MANU 421 Engineering Economy”.

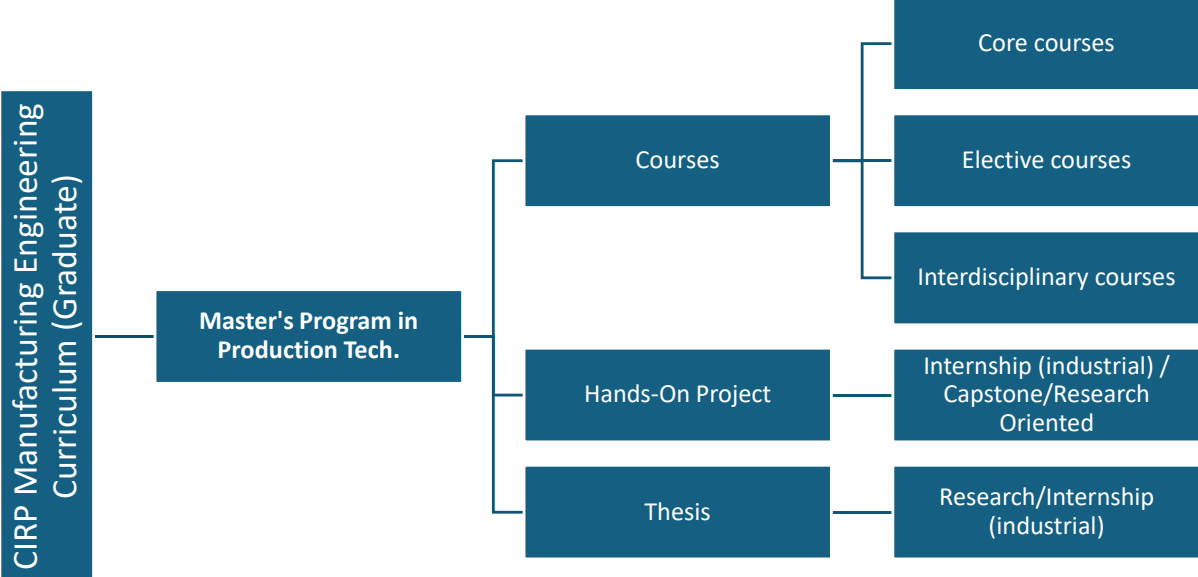
The work on the CIRP curriculum for Master’s Level Course was led by Nabil Anwer with the assistance of Adam Clare and Guido Tosello. A draft of the 2024 CIRP Curriculum for Master’s Level Course was proposed to the Task Force in February 2024. The Curriculum is composed of three streams as follows:

- Master's Program in Production Technologies (Production Tech.).
- Master's Program in Production Management (Production Mgt.).
- Master's Program in Production Systems (Production Sys.).

Taking Production Tech. as an example, the objective of the program is addressed as follows:

Provide learners with comprehensive knowledge and skills in advanced manufacturing processes and technologies, manufacturing process simulation, sustainable manufacturing and the integration of Industry 4.0 technologies into production technologies, grounded in a strong scientific and technological basis alongside data analytics and AI.

The structure and the courses of the program are listed as follows:



Master's Program in Production Technologies

CORE

- Advanced Manufacturing Technologies and Processes I
- Advanced Manufacturing Technologies and Processes II
- Additive Manufacturing
- Manufacturing Process Simulation
- Sustainability in Manufacturing
- Data Analytics and AI for Manufacturing

ELECTIVE

- Nanotechnology in Manufacturing
- Innovative Materials in Manufacturing
- Semiconductors Manufacturing
- Robotics and Automation in Manufacturing
- Precision Engineering
- Digital Twin Technologies

INTERDISCIPLINARY

- Innovation and Design/System Thinking
- Technology Ethics
- Cross-Cultural Management and Communication
- Research Methodology and Project Management

The drafts of the Curriculums for the Undergraduate Course and Master’s Level Course were discussed in a Task Force Meeting during the 2024 Winter Meetings in Paris. The drafts were accepted by the Task Force in the meeting and then sent to the Council Meeting for feedback. Further updates have been carried out after the Winter Meetings and General Assembly. The final version is currently available on the CIRP’s website, for the CIRP community and educators in manufacturing engineering to provide further feedback and recommendations:

<https://www.cirp.net/education/eportal/manufacturing-curriculum.html>

Further comments are welcome so that the METF team can continue to make improvements. We expect all our CIRP members to support promoting the curriculum, which will certainly enhance the reputation of CIRP and generate a significant impact on manufacturing education and development worldwide.

We take this opportunity to thank N. Anwer, X. Luo, D. Meyer, F. Tao, A. Clare and G. Tosello for the tremendous efforts they have made as part of this task force.

CIRP Keynote Papers

Our keynote papers are the result of an intensive collaboration between specialists working together during several years within an STC or CWG. 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.

2025 Keynote Papers submitted

STC A

Human-centric assembly in smart factories - L. Wang (1) -

Contact: lihui.wang@iip.kth.se

STC C

Integrated machining performance for assess. of cutting tools (IMPACT) -

I.S. Jawahir (1) - Contact: is.jawahir@uky.edu

STC Dn

Developing and leveraging digital twins for engineering design - N. Anwer (2) -

Contact: nabil.anwer@ens-paris-saclay.fr

STC E

Overcoming barriers to the implementation of multi-material additive manuf. (MMAM) -

A. Clare (2) - Contact: adam.clare@nottingham.ac.uk

STC F

Cut the scrap: using less material - J. Allwood (1) -

Contact: Allwood-Office@eng.cam.ac.uk

STC G

Advances in magnetic-field assisted finishing - H. Yamaguchi (2) -

Contact: hitomiy@ufl.edu

STC M

Fixtures and workpiece clamping systems in machining - H.C. Möhring (2) -

Contact: hc.moehring@ifw.uni-stuttgart.de

STC O

Future-proof production scheduling and control - M. Urgo (2) -

Contact: marcello.urgo@polimi.it

STC P

Dimensional metrology based on ultrashort pulse laser and optical frequency comb

- W. Gao (1) - Contact: gaowei@cc.mech.tohoku.ac.jp

STC S

Surface finishing by shape-adaptive processes - J. Yan (2) -

Contact: yan@mech.keio.ac.jp

Cross-STC

Production technologies and systems for e-mobility - J. Franke (2) -

Contact: Joerg.Franke@faps.fau.de

2026 Keynote Papers proposals

STC A

Decarbonisation of Manufacturing towards Net Zero - S. Thiede (2) -

Contact: s.thiede@utwente.nl

STC C

Part distortion in machining: prediction, measurement, and control - J. Outeiro (1) -

Contact: jose.outeiro@ensam.eu

STC Dn

Industrial Metaverse for future factory design and operations - D. Mourtzis (1) -

Contact: mourtzis@lms.mech.upatras.gr

STC E

Laser based manufacturing for electric traction and energy storage systems: State of the art and new challenges - A. Fortunato (3) - Contact: alessandro.fortunato@unibo.it

STC F

Shear-dominated processes and mechanics in forming and blanking - W. Volk (1) -

Contact: wolfram.volk@utg.de

STC G

Abrasive finishing of components made by additive manufacturing - J. Aurich (1) -

Contact: jan.aurich@mv.uni-kl.de

STC M

Digital Twins for Machine Tools - A. Verl (2) - Contact: alexander.verl@isw.uni-stuttgart.de

STC O

Digitally optimised maintenance: path towards sustainability and intelligence - J.

Erkoyuncu (2) - Contact: j.a.erkoyuncu@cranfield.ac.uk

STC P

Machine learning for metrology in manufacturing - G. Lanza (1) –

Contact: gisela.lanza@kit.edu

STC S

Manufacturing of structured surfaces for tissue engineering - G. Lucchetta (2) -

Contact: giovanni.lucchetta@unipd.it

Cross-STC

Semiconductor and Microelectronic Manufacturing - A. Shih (1) -

Contact: shiha@umich.edu

2027 Keynote Papers proposals

STC A

Humans, AI and robots for resilient assembly operations - S. Makris (2) –

Contact: makris@lms.mech.upatras.gr

STC C

Advanced methods for application and modelling of cooling lubricants in metal-cutting processes - D. Biermann (1) - Contact: Biermann@isf.de

STC Dn

Generative Design in Additive Manufacturing: A Comprehensive Review of Computational Methods, Tools and Applications - Y. Zhang (2) -

Contact: yicha.zhang@utbm.fr

STC F

Tube forming and processing technologies for a sustainable society - T. Kuboki (1) -

Contact: kuboki@mce.uec.ac.jp

STC G

AI-enabled smart abrasive machining - C. Guo (1) -

Contact: Changsheng.guo@rtx.com

STC M

Machining of metallic flexible parts - L.T. Tunc (2) -

Contact: ttunc@sabanciuniv.edu

STC O

Cybersecurity for the Emerging Manufacturing Networks - S. Bukkapatnam (2) -

Contact: satish@tamu.edu

STC P

Optical Measurement of Machines - J. Mayr (2) -

Contact: josef.mayr@inspire.ch

STC S

Traceability and uncertainty of characterisation of mechanical properties of technological surfaces - M. Galetto (2) -

Contact: maurizio.galetto@polito.it

Cross-STC

Microstructure-driven design of forming, additive manufacturing and cutting

operations: past, present and future - Lukasz Madej (1) - Contact: lmadej@agh.edu.pl

2028 Keynote Papers proposals

STC C

Role of Additive Manufacturing in Cutting - F. Zanger (2) -

Contact: frederik.zanger@kit.edu

STC E

In Space Manufacturing (ISM): Quo Vadimus, A Production Engineer's Perspective - A.

Malshe (1) - Contact: amalshe@purdue.edu

STC G

Abrasive processes towards manufacturing for sustainability - progress and challenges - E. Da Silva (2) - Contact: eraldojs@sc.usp.br

STC M

From reactive maintenance to prescriptive maintenance - S. Ihlenfeldt (2) -

Contact: buero.ihlenfeldt@iwu.fraunhofer.de

Our CIRP Conferences

57th CIRP Conference on Manufacturing Systems (CMS, May 2024, Portugal)

The 57th CIRP Conference on Manufacturing Systems 2024 (CIRP CMS'24), was held from 29th to 31st May, 2024, in Póvoa de Varzim. The conference, chaired by Prof. Goran D. Putnik (Universidade do Minho), represented an annual scientific meeting by the Scientific Technical Committee on Production Systems and Organization (STC O) of CIRP. The conference organization was supported by the Universidade do Minho, Portugal and CATIM – Technological Center for the Metal Working Industry, Portugal, as the main sponsors. The conference was held in the hotel on the ocean beach in Póvoa de Varzim, one of the most popular touristic towns in Portugal, only 30 km from the international airport and 37 Km from the center of Porto.



There were 287 papers presented, from 292 accepted.

The scope of CMS'24 was to review and discuss the research advances and industrial improvements in the field of engineering of manufacturing systems, which is facing significant and radical societal and technical changes. The conference's main objective was to provide an international forum to share and discuss visions, state of the art and innovations in the field, to disseminate them, and thus, generate a significant impact on the future of design and engineering of, and for, manufacturing systems.



The conference's second main objective was to provide a large space for collective learning, implemented through the innovative papers presentation format, so-called "Dialogue Sessions", through 5 sessions, in which the papers were presented by the papers' reviewers. The reviewers were designated among other authors that participated the "dialogue sessions, after the paper acceptance by the Scientific Committee. This intended the promotion of a richer discussion and dialogue with the authors and other participants, to promote mutual learning and generation of ideas for future developments.

The theme of this year's conference was "speeding up manufacturing". This theme was selected to address the need for advances in manufacturing processes, through new computational hardware and software, new algorithms, new technological solutions, advanced manufacturing systems architectures, agile management and exponential organizations, real-time manufacturing, and others.

The theme was addressed through three keynote lectures as follows:

- Keynote 1: High performance quantum computing: a disruptive technology presented by Andrés Gómez Tato, PhD (Applications & Projects Department Manager at Galicia Supercomputing Center - CESGA, Spain)
- Keynote 2: Speeding up manufacturing using new breed of data wrangling and machine learning methods presented by Sharifu Ura, Professor, Kitami Institute of Technology (KIT), Japan
- Keynote 3: Scarcity of resources vs speeding-up of production – a contradiction? Presented by Kirsten Tracht, Professor, University of Bremen, Germany

The paper presentations (except the keynote lectures, which were presented as the plenary lectures) were organized through 70 sessions, running in 7 parallel rooms, and 12 themes, along the three-day conference.



The conference organization also included the welcome reception, lunches and the conference gala dinner, as well as coffee breaks, as events that provided opportunities for the participants' networking and the space for common enjoyment and relaxation.

Special thanks for success of the Conference go to:

- the Keynote Speakers,
- all authors for their high-quality papers and discussions during the conference, contributing to the progress and learning of the community,
- the members of the Scientific Committee for their tremendous effort assuming the reviews, and to the ad-hoc invited reviewers that helped to evaluate and conclude efficiently the rigorous review process of all papers,
- the members of the Organizing Committee, namely Dr. Catia Alves, Dr. Helio Castro, Prof. Paulo Avila, Mrs. Zlata Putnik, Prof. Leonilde Varela, Mr. Pedro Pinheiro, Mr Luis Rocha, Dr. Jose Carlos Sá, Mr. João Pinho, Dr. Luis Pinto Ferreira and Dr João Bastos, who had the greatest responsibility for the successful organization of the conference, and a number of students that helped in managing and operating the conference and creating a good and comfortable environment for the work of the conference participants.
- the institutions: Department of Production and Systems Engineering, and School of Engineering, of the Universidade do Minho, and CATIM – Technological Center for the Metal Working Industry, both from Portugal, for providing all logistic support for successful organization of the Conference.

6th CIRP Conference on BioManufacturing (BioM, June 2024, Germany)

The 6th CIRP Conference on BioManufacturing - BioM 2024, held in Dresden, Germany, from June 11th to 13th, 2024, underlined its position as a premier global platform for advancements in biomanufacturing research and development. Themed "Future Production. Driven by Nature.", the conference attracted over 120 participants from 17 countries, fostering a productive exchange of knowledge and ideas between leading scientists, engineers, and industry representatives.



The conference program offered a comprehensive exploration of the multi-faceted world of biomanufacturing, including the topics of biological transformation, bio-intelligence, bio-mechanics, bio-design and -assembly, biological manufacturing processes and equipment, tissue engineering, biological inspired sensors and biosensors, biomedical solution, as well as AI and digital methods in biomanufacturing. Over three days, 16 sessions made it possible to delve into a wide range of topics. The keynote and technical sessions were expertly chaired by CIRP members, ensuring focused and productive discussions.



A highlight of the program was the series of renowned CIRP keynote speakers. Featuring presentations from the CIRP President Prof. Fengzhou Fang and seven esteemed CIRP Fellows, plus Dr. Masahiko Mori, CIRP Fellow and CEO of DMG MORI Group, Japan. The keynotes offered a unique opportunity to gain insights from the cutting edge of biomanufacturing research. These inspiring presentations not only shed light on the current state of the art, but also paved the way for future innovations, sparked lively discussions, and prepared the ground for new developments.



The strength of BioM 2024 resided in its diverse and distinguished attendees. The conference boasted a 75-member international scientific committee, comprised of highly reputable and recognized researchers including many CIRP members. Furthermore, the active participation of CIRP Fellows enriched the discussions. This unique mix of established experts and emerging researchers fostered a stimulating environment for collaboration and mutual inspiration. An accompanying exhibition on biomanufacturing research on the first day allowed attendees to delve deep into cutting-edge technologies and engage in discussions with scientists. Building upon these interactions, industrial tours provided valuable first-hand insights into practical applications of biomanufacturing principles.



The BioM 2024 conference Chairs would like to thank the International Academy for Production Engineering CIRP for the sponsorship and DMG MORI for the co-sponsorship of 6th CIRP BioM 2024. Special thanks also go to the members of the International Scientific Committee for their voluntary review of the submitted papers. Many thanks to the people and organizations who contributed to the realization of the 6th CIRP BioM conference: the members of the organization committee Prof. Welf-Guntram Drossel, Prof. Martin Dix, Prof. Christian Brecher, Prof. Christoph Herrmann, Prof. Thomas Bergs, and Dr. Simon Harst; the Session Chairs for their efforts and management help, as well as thanks to the Fraunhofer IWU, TU Dresden University, and Chemnitz University of Technology TUC for the organization of the conference.

31st CIRP Conference on Life Cycle Engineering (LCE, June 2024, Italy)

The 31st CIRP Life Cycle Engineering Conference (CIRP LCE 2024) was held from June 19-21, 2024, in Torino, Italy, hosted by Politecnico di Torino. Co-chaired by Prof. Luca Settineri and Prof. Paolo C. Priarone from the Department of Management and Production Engineering of Politecnico, the conference focused on topics such as eco-design, sustainable manufacturing, sustainable supply chain management, sustainable product development, and life cycle assessment. The program featured three keynote speeches and 182 technical presentations, spread across four parallel tracks over the three days. The event saw over 230 attendees, marking the highest participation in the history of the CIRP LCE Conference and reflecting the growing interest in this field of research.

During the Opening Ceremony, the Participants were addressed by the Minister for Innovation and Economic Development of the Region Piedmont, the Deputy Mayor for Innovation and Environmental Policies of the City of Torino, representatives from industrial associations, and the Vice Rector for Innovation and Research. After this formal moment, three keynotes included insights from Academia, from the EU government, and from an industrial partner of the Conference on the role of technological innovation in promoting sustainability. These talks provided essential context for the interdisciplinary discussions that followed throughout the conference.

The social events included a welcome cocktail at Valentino Castle, a 17th-century castle that served as the original location of Politecnico di Torino after its establishment in 1859, now housing the Department of Architecture and Design. Participants enjoyed guided tours of the castle conducted by PhD candidates in History of Architecture.



The other social event was the Conference Banquet, held at the Museum of Resurgence (Museo del Risorgimento), a landmark celebrating Italy's unification in the mid-19th century. Before dinner, attendees explored the extensive museum and enjoyed Italian wines and delicacies in the main hall. During the banquet, Prof. Mativenga, host of the 32nd CIRP LCE Conference 2025 in Manchester, invited everyone to attend this upcoming event.



The closing session on Friday afternoon was well-attended and included presentations about the upcoming CIRP LCE Conference and the LEO Award, which honors Prof. Leo Alting's contributions to the life cycle engineering community. Núria Boix Rodríguez received the award for the best paper by an early-career researcher for the paper titled "Analysis of reparability index to improve disassemblability and serviceability in cooker hoods."

In conclusion, the 31st CIRP LCE Conference was highly successful. The quality of submissions and presentations continues to improve, setting a high standard for the event. The unprecedented number of participants exceeded the organizers' expectations.



The technical program featured strong contributions from the manufacturing community, significantly contributing to the conference's success. The social program was engaging and enjoyable. The CIRP Life Cycle Engineering Conference remains a key annual event for the community and is expected to continue thriving in the future.

18th CIRP Conference on Computer Aided Tolerancing (CAT, June 2024, UK)

Around 60 delegates attended the international 18th CIRP Conference on Computer Aided Tolerancing, hosted by the University of Huddersfield and its renowned Centre for Precision Technologies (CPT).

Held on campus at the university's Charles Sikes Building, the three-day event brought together academics to meet, exchange ideas, and showcase their latest research in the field of smart specification and verification.



The conference, organized by the University of Huddersfield in collaboration with the University of Bristol, also featured a dinner at The Hepworth Art Gallery in nearby Wakefield.

Themes discussed at the conference included: specification and standardization, tolerance design, digital twin for geometrical quality, modeling and measuring geometrical deviations, quality control and production metrology, and data-driven tolerance analysis.



The University of Huddersfield's world-renowned expert in the field of metrology Professor Dame Xiangqian (Jane) Jiang, who is the chief scientist at the CPT and director of the current Future Metrology Hub, opened the conference.



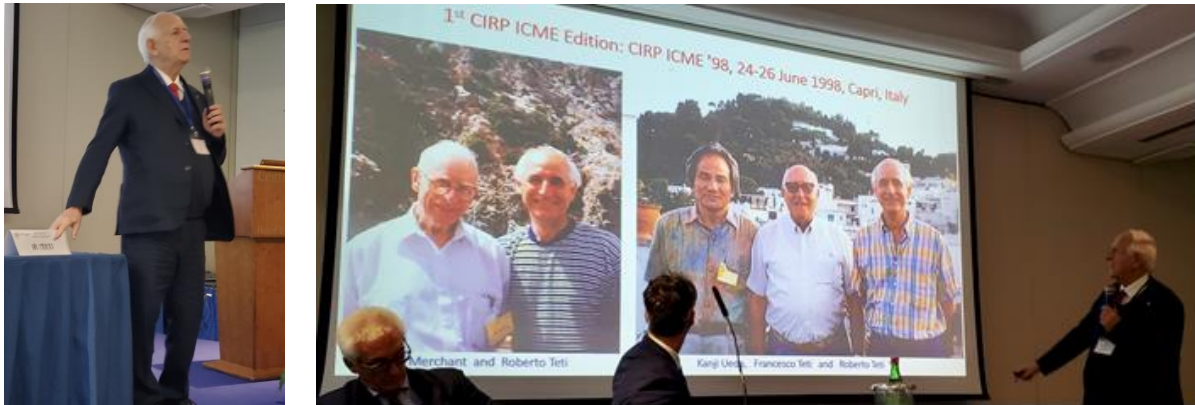
Keynote speakers included Professor Nabil Anwer of Paris-Saclay University and Director of LURPA; Professor Edward Morse of the University of North Carolina at Charlotte and Director of the Centre for Precision Metrology, and Professor Liam Blunt, director of the University of Huddersfield's CPT.

Professor Jiang, CIRP Fellow, commented: "Bringing together leading thinkers from across the metrology landscape is core to the Future Metrology Hub mission and we were delighted to host this conference on behalf of CIRP."



18th CIRP Conference on Intelligent Computation in Manufacturing Engineering (ICME, July 2024, Italy)

The 18th CIRP Conference on Intelligent Computation in Manufacturing Engineering (CIRP ICME '24), 10-12 July 2024, 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 '24.



The response to the 18th 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. CIRP ICME '24 has attracted more than 230 delegates with 3 keynote papers in the Plenary Session, and 205 papers in the Symposium, Special Sessions, and Technical Sessions presented by authors from 24 countries and 4 continents.



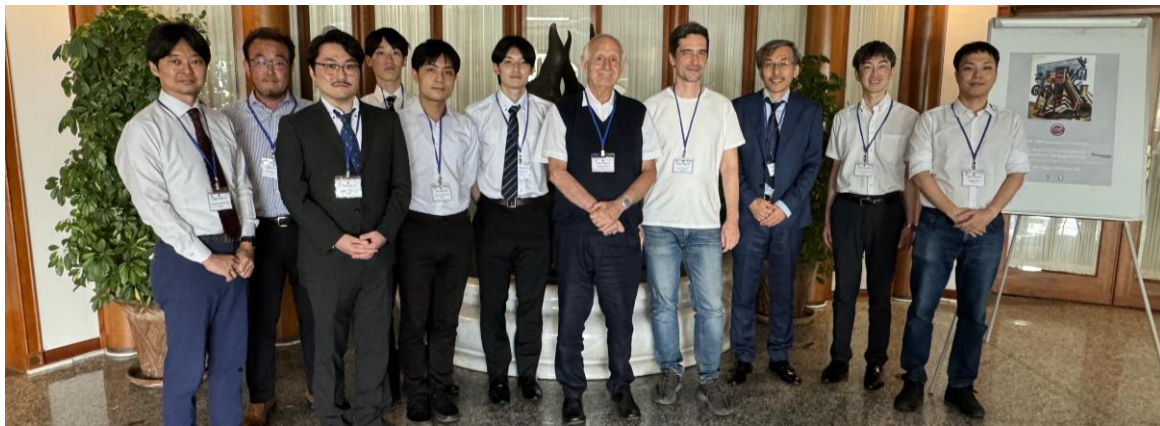
The topics dealt ranges from Manufacturing Systems aspects (production system modeling, design, planning, and control; machine tools and special machinery, assembly systems, battery production, robotics and human-robot collaboration, maintenance systems) to Manufacturing Technology matters (cutting technologies, grinding processes and abrasive manufacturing, nontraditional machining, forming, casting, welding, additive manufacturing, quality assurance, metrology and testing, as well as Emerging Technological issues (digital and smart factory; sustainability and energy efficiency, biological transformation in manufacturing, machine learning, virtual

and augmented reality, cyber-physical systems, digital twins, big data; cloud manufacturing, human-centered manufacturing, and human factors).



Furthermore, three Special Scientific Events were organized:

- The Symposium on IWES (International Workshop on Emergent Synthesis), chaired by Prof. Nariaki Nishino, Japan, in honor of the IWES founder Prof. Kanji Ueda, Past-President of the CIRP.
- The Special Session on “EC BioMeld Project and Biological Transformation in Manufacturing”, chaired by Prof. Igor Balaz, Serbia.
- The Special Session on “TOP & NEMESI Projects”, chaired by Prof. Luigi Nele.



Through this wide range of research topics, the CIRP ICME '24 aimed at providing an international forum for the exchange of up-to-date knowledge, experience, results, as well as the review of progress and 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 organizations that contributed to the realization and success of CIRP ICME '24: Prof. Giovanni Totis for his keynote presentation “Innovative methodologies for cutting force measurement and filtering in advanced machining operations”, Dr. Davide Santoro for his keynote presentation “Demonstrators system within the R&D&I Project NEMESI”; Prof. Igor Balaz for his Keynote Presentation “The Horizon Europe BioMeld Project: Integrating modeling, simulation, AI, and biointelligent manufacturing” and for chairing the Special Session on “EC BioMeld project and biological transformation in manufacturing”; Prof. Nariaki Nishino for organizing and chairing the “IWES Symposium”; Prof. Luigi Nele for organizing and chairing the Special Session on “TOP & NEMESI Projects”; the



members of the Organizing Committee: Prof. Dorian D'Addona, Dr. Alessandra Caggiano, Dr. Alessandro Simeone; and finally, all of the Session Chairs for their efforts and management help.



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 organizational support; and the co-sponsor of the event, the Fraunhofer Joint Laboratory of Excellence on Advanced Manufacturing Technology (Fh J_LEAPT UniNaples) participating with representation from Germany and Italy.



Future CIRP Meetings, Conferences and Sponsored Conferences

For the dates and locations of next **CIRP General Assemblies**
go to “EVENTS” → [Next CIRP General Assemblies](#)

For the dates of next **CIRP Winter Meetings** in Paris
go to “EVENTS” → [Next CIRP Winter Meetings](#)

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

For the most recent overview of our coming **CIRP Sponsored Conferences**
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You can find all CIRP Conferences and Sponsored Conferences **past events** through
the link EVENTS → [CIRP Past Events](#)

New books from our members

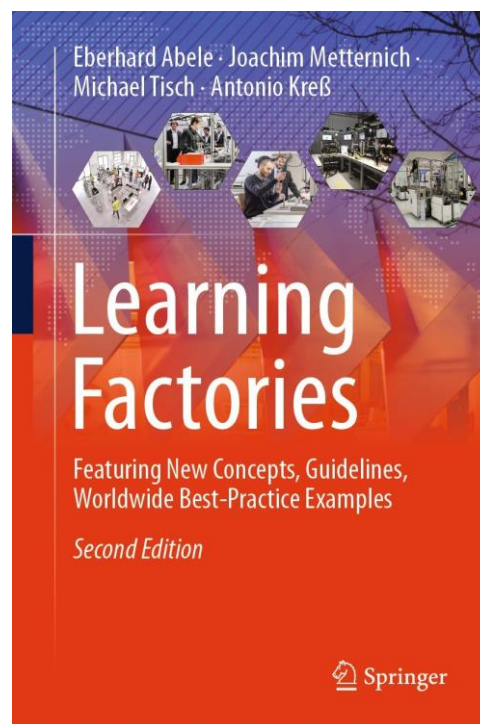
Learning Factories

Authors: Eberhard Abele, Joachim Metternich, Michael Tisch, Antonio Kreß

Highlights:

- Presents the international state of the art on learning factories
- Teaches the reader how to use the concept for their company or research institute
- Makes an overview on best-practice examples easy to grasp for experts in individual fields.

This book presents the state of the art of learning factories. It outlines the motivations, historic background, and the didactic foundations of learning factories. Definitions of the term learning factory and an updated morphological model are provided, as well as a detailed overview of existing learning factory approaches in industry and academia, showing the broad range of different applications and varying contents in all continents.



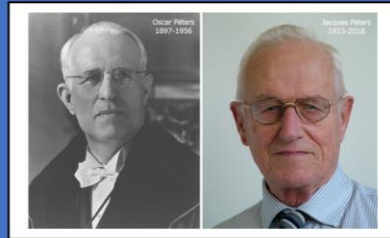
International learning factory best-practice examples are presented in a detailed and structured manner. The state of the art of learning factories curricula design and their use to enhance learning and research, as well as potentials and limitations, are presented. Further research priorities and innovative learning factory concepts to overcome current barriers are offered.

While today numerous learning factories have been built in industry (big automotive companies, pharma companies, etc.) and academia in the last decades, a comprehensive handbook for the scientific community and practitioners alike is still needed. The book addresses therefore both researchers in production-related areas that want to conduct industry-relevant research and education, as well as managers and engineers in industry, who are searching for an effective way to train their employees. In addition to this, the learning factory concept is also regarded as an innovative learning concept in the field of didactics.

<https://link.springer.com/book/10.1007/978-3-031-46428-7>

O&J Peters Prize

The O&J Péters Fund



Call for nominations for: The International O&J Peter Prize 2025, and The O&J Peter's Grant for Development Cooperation

Since its foundation in 1986, the Oscar and Jacques Péters Fund has awarded the triennial **O&J Péters Prize**, honoring excellent scientific research in the field of production engineering. After Professor Jacques Péters passed away in December 2018, at the blessed age of 95 years, the Fund decided to pay tribute to the scientific work in production engineering of Professor Oscar Péters and his son Jacques Péters, who both have played a prominent role at world level by turning manufacturing research into a full-fledged scientific discipline, by establishing **The International O&J Péters Prize**.

The International O&J Péters Prize will be triennially awarded to one or more individuals for an excellent scientific and/or technological contribution, with positive societal impact, in the broad field of production engineering. The following areas are relevant for the Prize: production processes, production systems, dimensional metrology, precision engineering, production management, mechatronics, robotics, medical technology, sustainable production.

The Prize consists of a diploma and a cash prize of **50'000 euros**.

Besides awarding this important International Prize, the Board of the O&J Péters Fund has decided to honor the special interest of Prof. Jacques Péters in including the Third World countries to benefit from the new developments in production engineering research and technology, by establishing **The O&J Péters Grant for Development Cooperation**.

The triennial **O&J Peters Grant for Development Cooperation** consists of a scholarship or grant awarded to one or more applications in one of the following three categories in the broad domain of production engineering.

Category 1. Postdoc scholarship for a research period at KU Leuven, between 3 and 12 months, of a researcher of an academic engineering school in a developing country, preferably to an alumnus/alumna of the Faculty of Engineering Science or the Faculty of Engineering Technology of KU Leuven.

Category 2. Financial support of a research or educational project executed in a developing country supported by the Department of Mechanical Engineering of KU Leuven.

Category 3. Starting grant to a young academic in a developing country, with a Ph.D. degree from KU Leuven, who starts off his/her academic career at an engineering school in his/her country.

The **Grant** amounts up to 35'000 euros.

For **The International O&J Péters Prize 2025**, an email of intent to nominate received by May 15, 2025, is encouraged. The deadline for completed nominations is June 30, 2025. Details of the eligibility conditions and the nomination procedure can be found at <https://www.mech.kuleuven.be/o-j-peters-fund>. Self-nominations are not withheld. The nominated proposals will be carefully screened and the laureate assigned by the Selection Committee. The award ceremony will take place somewhere around October or November 2025.

The nomination procedure for **O&J Peters Grant for Development Cooperation** can also be found on the abovementioned website.

From the CIRP Office



Chantal Timar-Schubert

CIRP Annals' submissions & publications process, CIRP meetings, guests, CIRP website, candidatures for membership, Internal Regulations and any other internal matters.



Agnès Chelet

Financial aspects: accountancy, membership fees, conferences sponsorships' fees & reports, Winter meetings' registrations. Agendas & minutes of the scientific meetings.

News

- We are glad to welcome Violaine Baudin at CIRP Office, to succeed Chantal after next Winter Meetings:



- All information for the next [2025 Winter Meetings](#) held in Paris is provided on our Website, please don't forget to register online.
- The deadline to submit your paper to CIRP Annals is 15 January 2025, please do not forget to follow the new procedure and add your CRediT Author Statement.