The International Academy for Production Engineering

NEWSLETTER

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From the President

Dear Colleagues,

It is my great pleasure and honour to address the CIRP community in this newsletter. I am very proud of being part of this fantastic community of leading engineers and researchers. The more and the longer I am connected with CIRP the more deeply I understand and feel its importance worldwide. A world without new or developing technologies is not evolving as it could. Furthermore, caring about the consequences of new technologies is of paramount importance today, when we are confronted with fundamental challenges worldwide.

CIRP has a long and brilliant history. This year we are celebrating the 75th anniversary from the foundation in 1951. We want to preserve our identity as a leading academy as well as to adapt to today's fast-moving world asking us for new solutions and improvements. Aside the consolidated fundamental work carried out by CIRP's Scientific Technical Committees (STCs), I am very happy of the vitality of the several Collaborative Working Groups (CWGs) tackling new challenges.

One of the adaptations CIRP is undertaking is about our beloved and respected journal, the CIRP Annals. This followed a long preparation over the last five years, which has included hard work by tasked officers and fellows and involvement of the community at large to the highest possible degree. The Annals are advancing towards a new submission and review process, more open to authors as to their provenance (either CIRP members or not) and to the number of submissions allowed throughout the year (unlimited, except for papers submitted for the GA, which will follow the same rules as before). At the same time, the Annals will continue their essential role as a basis for selecting new members to our Academy. This will be done the same way as before, through the review by senior respected fellows and relevant STC officers of the paper submissions following our well-established rules and guidelines. This is very important, because the excellence of CIRP stems from the excellence of its members, and their prudent selection is key for the future of our Academy.

The General Assembly in Turin will be the last one with the Part I papers in the conference programme accepted through CIRP's historical submission and review process. CIRP's Future Publishing task force and the CIRP Office have been working with Elsevier to support the transition to the new Annals, from the contract to the internet platform which has been beta-tested extensively, leading to the final preparations. Everybody will be welcome to submit to the new Annals, and for CIRP members to indicate if their submission is intended for presentation at the 2027 General Assembly in Beijing.

In developing the framework for the new Annals, we have drawn upon the valuable experience gained from our other journal founded by Prof. Monostori in 2008—the CIRP JMST. We are joining the best of the Annals and the JMST traditions and experiences in the new Annals, with a vision of scientific excellence contributed by members and non-members under the direction and supervision of esteemed and recognized fellow officers. I am very grateful to our Vice President Prof. Kara for leading the preparation of this new framework, and to the incoming Editor-in-Chief Prof. Budak for leading this new adventure so important for all of us in the coming years.

Another important adaptation has occurred seamlessly: the transition from our esteemed Assistant Secretary General Chantal Timar-Schubert to her successor Violaine Baudin. We all know how important the role of the central office is in running the CIRP and how much we rely on it for all internal matters. This transition occurred during Prof. Denkena's presidency last year and I found myself as the first President with a full term with Violaine. I am delighted to say that she is doing a fantastic job in supporting the CIRP and myself beyond expectation. The team in rue Mayran is completed by Agnès Chelet and I am very sure that we are in extremely good hands with them together for many years to come. All this has been possible thanks to the tireless commitment of our Secretary General, Prof. Dumur, from the selection of the new Assistant Secretary General to her introduction to CIRP. I am witnessing daily how important his role and actions are, often not entirely obvious to all members.

We had very fruitful and pleasant Winter Meetings in Paris at the Maison de la Mutualité in February. It is a tradition and a very important milestone in our CIRP life. With nearly 400 attendees it was a success, as usually is year after year.

While our memory is still vivid, we are facing the next important event in CIRP: the General Assembly in Turin. I am extremely honoured to serve in the unprecedented double role of CIRP President and Co-Chair of the GA together with Prof. Luca Settineri. The preparation is proceeding well and Luca and I are looking forward to welcoming you all to our home city in August. We are committed to organize all that is needed, to host as fruitful and pleasant a scientific and social event as possible.

A novel activity I would like to mention here is the CIRP School. Prof. Fang originated this idea during his presidency in 2023. He asked me to act as principal, and I accepted gratefully. A task force was established that shaped the idea into an actionable procedure later approved by the Council. Four Sessions have been held so far: Zurich (2025-02, Prof. Wegener), Turin (2025-11, Profs. Settineri and Priarone), Tokyo (2026-03, Prof. Tomiyama), Tianjin (2026-05, Prof. Fang). They were very successful and proved that early career scientists worldwide can look at CIRP as an extremely qualified opportunity for specialized advanced training. Notably, some Corporate Members joined too, proving that this initiative is interesting to them as well. I believe that this involvement should and will be increased in future School Sessions, as a further service to Corporate Members, which are so important in our Academy and for industrial progress. See the dedicated articles in this newsletter for further information.

Dear colleagues, I look forward to meeting you all in Turin in August!

With best regards,
Alessandro Balsamo
President of CIRP 2025-2026

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 2025 General Assembly in Stockholm and the 2026 Winter Meetings in Paris. We now look forward to our next gathering for scientific discussions and exchange of ideas at the upcoming 2026 General Assembly in Turin, Italy.

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 Elected Full Member of the National Academy of Engineering of Korea

In January 2026, Professor Sung-Hoon Ahn of Seoul National University, a CIRP Fellow, was elected as a Full Member of the National Academy of Engineering of Korea (NAEK).

The National Academy of Engineering of Korea is the nation's most prestigious organization in the field of engineering and technology, recognizing individuals for distinguished achievements in research excellence, technological innovation, and contributions to industry and society.

Professor Ahn is internationally recognized for his research in precision engineering and advanced manufacturing technologies. He is also a Fellow of the Korean Academy of Science and Technology (KAST), where he plays an active role in strengthening global partnerships, fostering international collaboration, and promoting scientific and engineering exchange between Korea and the international community.

His election as a Full Member reflects both his long-standing academic achievements and his leadership in international cooperation and science diplomacy.

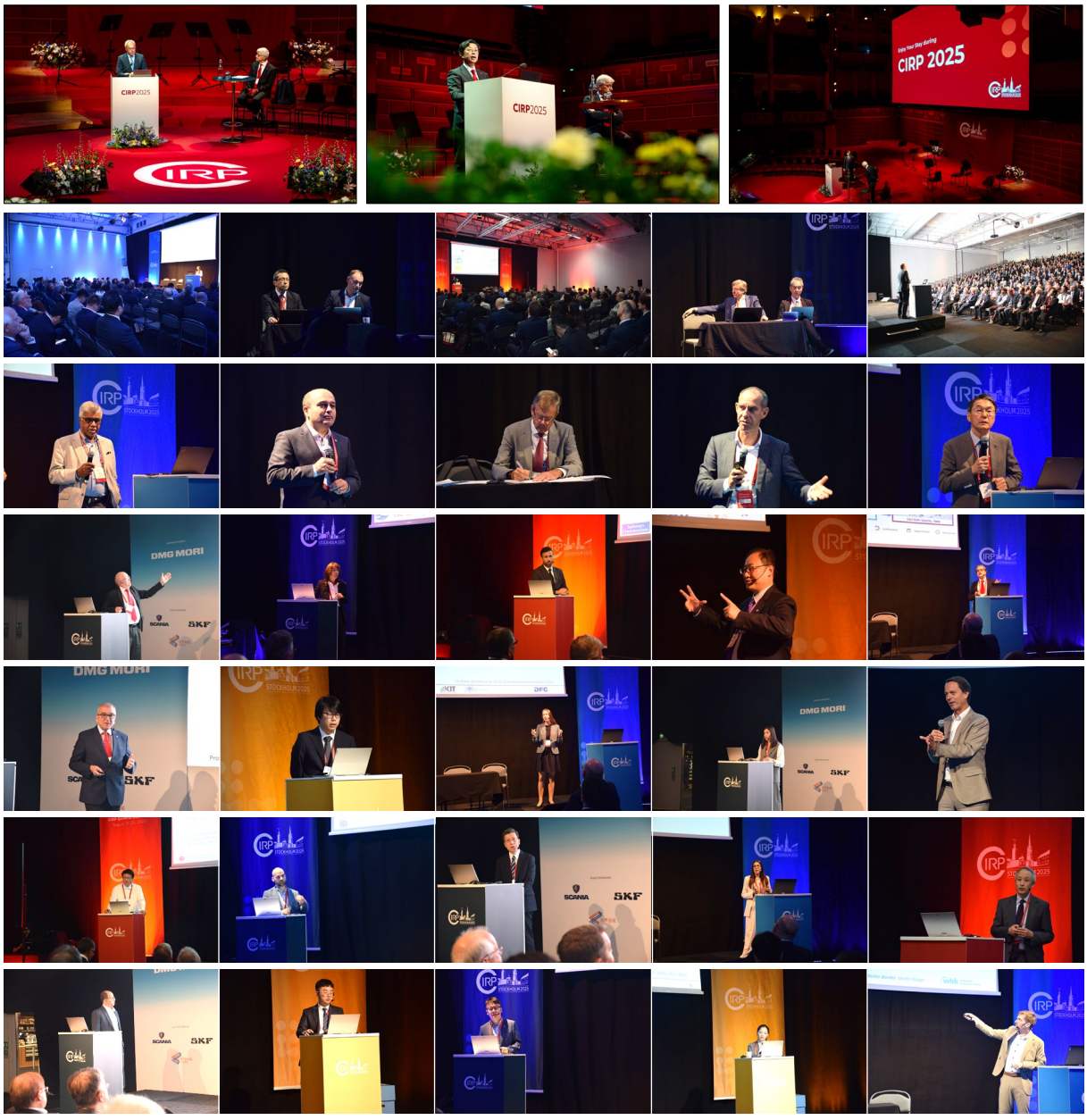
General Assembly 2025

The 74th CIRP General Assembly (GA) held in Stockholm, Sweden, was successfully organised by the Swedish National Organising Committee (chaired by Prof. Lihui Wang of KTH, and co-chaired by Prof. Rikard Söderberg of Chalmers and Prof. Andreas Archenti of KTH). The execution was carried out by the Local Organising Committee, chaired by Prof. Xi Vincent Wang of KTH and supported by 18 sponsors.

Spread over seven days, the GA was attended by 759 participants from 39 countries and regions, including 275 Members, 98 Corporate members, 40 Research Affiliates, 263 Invited Guests and Exhibitors, and 83 Accompanying Persons. The GA featured 11 Keynote papers, and 136 research paper presentations.

The 2025 GA was uniquely integrated with the Nobel spirit on scientific excellence, featuring a Nobel-style Opening Ceremony at Stockholm Concert Hall and Assembly Dinner at Stockholm City Hall, where the Nobel Prize Ceremony and Nobel Banquet take place each year, respectively. In this setting, the participants not only enjoyed intensive scientific exchanges and networking opportunities but were also treated with a Nobel experience and to Swedish culture, cuisine, music, and hospitality.

Working scientifically…



Networking friendly…



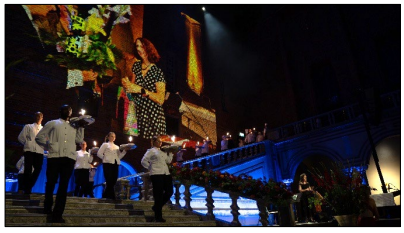
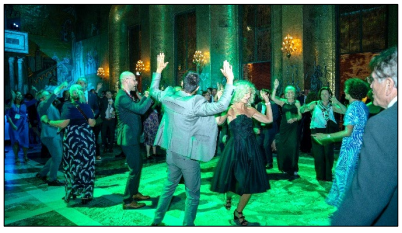







Celebrating Chantal's lifetime services to CIRP




Exploring Stockholm culturally…



From the farewell dinner …

<u>*Comments from the GA participants:*</u>

Members of Local Organising Committee would like to thank you for your support!

- *"Meticulous planning and attention to details in execution have shown to make a real difference, and that's a good experience that future GA organizers can learn and benefit from. Associating each lunch with a "theme" and offering culturally characteristic foods of high quality have, among others, contributed to making CIRP 2025 stand out as one of the best organized General Assemblies in the history of CIRP GAs."*
- *"All aspects of the CIRP GA were well planned and professionally orchestrated. The opening and conference dinner were the definite highlight. It means a lot for researchers to have this immersive Nobel experience, which makes Stockholm a very memorable place."*
- *"If you take CIRP GA in Stockholm as a blueprint, nothing can go wrong at future conferences."*
- *"I liked most the opening session and the assembly dinner in such precious and famous sites in a wonderful solemn atmosphere."*
- *"The venue was very practical to walk around different sessions, food was very good (breaks, lunches, dinners). Opening ceremony and keynote sessions at the Concert Hall were amazing."*
- *"The organization was excellent. The idea of introducing a high variety in the lunch is also highly appreciated. Congratulations to the organizing team."*
- *"I have no suggestions for improvement. I appreciated the public transit pass, the wide selection of hotel recommendations, and the delicious and varied lunch menus."*

CIRP Awards

The **General Pierre Nicolau Award for 2025** was presented to **Dr. Jens Grønbaek**.

Dr. Jens Grønbaek, a mechanical engineer with a master's and doctorate degree from the Technical University of Denmark (DTU), has made a significant impact on cold forging technology and advanced tool engineering.

Dr. Grønbaek receiving the General Pierre Nicolau Award from the President of CIRP, Prof. B. Denkena.

His PhD research has resulted in the foundation for the establishment of his company, STRECON A/S, which has become renowned for its advanced prestressing systems used in cold forging and other high-pressure tooling systems. Dr. Grønbaek and STRECON A/S have taken several patents that reflect significant innovations in prestressed tooling systems and precision polishing methods. Dr. Grønbaek has also been highly active in the International Cold Forging Group (ICFG), where he took on leadership positions.

Dr. Grønbaek has collaborated extensively with universities worldwide, with a particularly strong connection to DTU. He has contributed as external examiner, guest lecturer, and mentor in various innovation programs at DTU, sharing his expertise in advanced forging technologies and in innovation start-up of companies.

Dr. Grønbaek during his award acceptance address.

We earnestly congratulate Dr. Grønbaek for his outstanding contributions to the field of production engineering, which are recognized by CIRP's General Pierre Nicolau Award.

The **F.W. Taylor Medal for 2025** has been awarded to **Dr. Jinshi Wang**.

Dr. Wang is Associate Professor at the School of Precision Instruments and Opto-Electronics Engineering, Tianjin University. He was awarded this prize for his paper:

"Toward efficient fabrication of microstructures on SiC with nanometric surface quality".

Dr. Jinshi Wang and the President of CIRP Prof. Berend Denkena during the presentation of the F.W. Taylor Medal at the Opening Ceremony of the 2025 General Assembly.

Dr. Wang had presented this paper during the STC-E session of the CIRP General Assembly in Thessaloniki in 2024. The paper was co-authored with Prof. Fengzhou Fang from Tianjin University.

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

Elections approved at the General Assembly Meeting 2025

2024-2025 Board and Council members

President	Dr. A. Balsamo
Vice President	Prof. S. Kara
Vice President Elect	Prof. J. Vancza
Past President	Prof. B. Denkena
Secretary General Treasurer	Prof. D. Dumur
Technical Secretary	Prof. K. Erkorkmaz
Council Members	Senior Lecturer Dr. P. Arrazola
	Prof. E. Budak
	Prof. G. Lanza
	Prof. A. Matsubara
	Prof. B. Mullany
	Prof. J. Sutherland

Elected Fellows

- Dr. V. Bedekar (India)
- Prof. C. Herrmann (Germany)
- Prof. Y. Kakinuma (Japan)
- Prof. H.C. Möhring (Germany)
- Prof. J. Rech (France)
- Prof. L. Romoli (Italy)
- Assoc. Prof. G. Tosello (Denmark)
- Prof. H. Utsunomiya (Japan)

New Associate Members

- Prof. N. Ben Khalifa (Germany)
- Assoc. Prof. W. Bushlya (Sweden)
- Prof. G. Genta (Italy)
- Prof. X. Luo (UK)
- Prof. M. Michihata (Japan)
- Assoc. Prof. J. Wang (China)
- Prof. J. Yoon (Korea)
- Prof. A. Zabel (Germany)
- Dr. Hui Deng (China)
- Dr. Maria Chiara Magnanini (Italy)
- Dr. Urara Satake (Japan)
- Dr. Weiguang Wang (UK)

Fellows Emeritus

- Prof. P. Butala (Slovenia)
- Prof. S. Newman (UK)
- Prof. G. Schuh (Germany)
- Prof. M. Shpitalni (Israel)

New Corporate Members

- ARCTOS Technology Solutions (USA)
- AUROS Technology, Inc. 5 (Korea)
- CERATIZIT Deutschland GmbH (Germany)
- Comptoir General du Ressort (CGR) (France)
- Hanwha Aerospace (Korea)
- Kawasaki Heavy Industries, Ltd. Aerospace Systems Company (Japan)
- Saab AB (Sweden)

New Research Affiliates

- Mr. M. Benfer (Germany)
- Dr. A. Catalano (Italy)
- Dr. O. Demir (Italy)
- Dr. P. Gönnheimer (Germany)
- Dr. P. Lyu (China)
- Dr. G. Maculotti (Italy)
- Dr. J. Priest (UK)
- Dr. S. Webster (USA)
- Dr. D. Wolfschläger (Germany)
- Ph.D. S. Zan (UK)

New STC Officers

STC C:	Sen. Lec. Dr. P. Arrazola (Ch), Prof. V. Schulze (V-Ch), Prof. J. C. Outeiro (Sec)
STC Dn:	Prof. N. Anwer (Ch), Prof. A. Liu (V-Ch), Prof. T. Sakao (Sec)
STC F:	Prof. S. Bruschi (Ch), Prof. B. Kinsey (V-Ch), Prof. M. Merklein (Sec)
STC P:	Prof. Y. Takaya (Ch), Prof. E. Morse (V-Ch), Prof. J.A. Yagüe-Fabra (Sec)
CMAG:	Dr. Luis Uriarte (Ch), Dr. Y. Nonaka (V-Ch), Prof. K. Erkorkmaz (V-Ch), Dr. S. Engin (Sec)

From the Editorial Committee

(by J. Váncza, EC Chair)

In 2026, immediately prior to the Winter Meeting, the Editorial Committee (EC) met in Paris at BOPE's flexible workspace facilities, conveniently located near the CIRP Office. The inspiring setting undoubtedly contributed to the productivity of our editorial work, and it was a particular pleasure to collaborate face-to-face with fellow EC members.

The past year also brought changes to the composition of the EC. We bid farewell to our colleagues Don Lucca and Steve Newman, whose contributions and dedication to the Committee are sincerely appreciated. At the same time, we were happy to welcome Hitomi Yamaguchi and Eric Lutters as new members of the EC. Matt Davies kindly agreed to continue serving as Vice-Chair of the Committee, and I am grateful for his ongoing support and commitment. Once again, I would like to express my sincere thanks to our former EC members for their valuable service, to our new colleagues for accepting this responsibility, and to the whole EC for carrying out their duties with professionalism, diligence, and a strong spirit of collegiality. The CIRP Office continuously supported our work with remarkable efficiency and dedication, quietly taking care of countless administrative and organizational tasks. I would like to extend my sincere thanks to Violaine Baudin for her enthusiasm, responsiveness, and exceptional support in all arrangements.

The 2026 EC review process

As a general practice, each manuscript was reviewed by four colleagues: two STC Officers and two EC members. In addition, several CIRP colleagues were invited to assess submissions requiring specialized expertise. The review process was highly efficient, with almost all evaluations completed according to schedule, enabling the Editorial Committee to make timely final decisions on the scientific program for the forthcoming CIRP General Assembly in Turin.

STC	papers in 2025	papers in 2026	change
A	27	27	0%
C	29	32	10%
Dn	25	30	20%
E	39	54	38%
F	23	20	-13%
G	17	15	-12%
M	29	22	-24%
O	32	29	-9%
P	23	22	-4%
S	18	25	39%
total	**262**	**276**	**5%**

As in previous years, the 2026 paper submission and review process was managed entirely through Elsevier's Editorial Manager system. A total of 276 regular paper

submissions were received in 2026, representing a 5% increase compared with the previous year. At the same time, the distribution of submissions across the STCs changed considerably, as illustrated in the table above.

In total, 34 submissions were cooperative work papers, while 32 were sponsored submissions. We also observed a growing number of submissions accompanied by supplementary materials. Taking into account the 11 keynote papers as well, each member of the EC completed, on average, 45 reviews. In addition, the STC Chairs, Vice-Chairs and, in some cases, Secretaries reviewed the submissions within their respective STCs, while invited Fellows kindly reviewed a couple of keynote and regular papers. As is customary for CIRP Annals papers, every submission therefore received at least four independent peer reviews.

Following the standard procedure of our publisher, each paper was individually screened for originality using iThenticate. This year, the iThenticate similarity scores ranged from 2% to 53%. **Papers with scores above 25% were carefully examined, and some were rejected because of unacceptable similarity to existing publications. Papers offering only a marginal contribution beyond previously published work were likewise not accepted.** Overall, 47% of the submitted papers were provisionally accepted, with acceptance rates across the STCs ranging from 30% to 73%. **As in previous years, papers were assessed solely on the basis of their scientific quality, irrespective of the number of presentation slots available at the General Assembly**.

STC	Accept	Reject	Accept%	Total	Accept % 2025
A	12	15	44%	27	48%
C	13	19	41%	32	48%
Dn	9	21	30%	30	48%
E	22	32	41%	54	51%
F	11	9	55%	20	57%
G	9	6	60%	15	59%
M	16	6	73%	22	66%
O	13	16	45%	29	38%
P	11	11	50%	22	65%
S	14	11	56%	25	44%
Total	130	146	47%	276	52%

The keynote review schedule introduced last year proved effective in distributing the reviewers' workload more evenly and advancing the publication timeline of our keynote papers. As a result, we were able to review the first revisions during the EC meeting, and final approval for publication could be granted by the first day of May. At present, most papers in Volume 75 of the CIRP Annals have already been published, while the remaining papers still in production are scheduled to be released later in June.

I would like to emphasize that CIRP Annals keynotes represent the collective expertise and long-term collaborative efforts of the CIRP community, helping to define emerging fields and future research directions of manufacturing science and technology. They

provide both an accessible gateway for newcomers and an authoritative source of insight for experienced researchers. **I encourage all colleagues to benefit from the knowledge, perspectives, and vision conveyed in our keynote papers.**

Visit by CIRP President Sandro Balsamo to the Editorial Committee at BOPE, Paris during reviews of the 2026 CIRP Annals papers.

Our future publications

In 2020, the CIRP Council established a Task Force to define the future publication strategy of the Academy. After a multi-year process involving situation assessment, proposal development, and extensive consultations and refinements, a consolidated proposal was presented for electronic vote at the 74th CIRP General Assembly in Stockholm in 2025. Following the approval of the proposed changes by a substantial majority of the Academy, the Task Force continued its work to implement the required measures in close cooperation with Elsevier, our publisher.

While the CIRP Annals will, in the future, welcome submissions from the global production engineering research community, it will retain its longstanding tradition of soliciting and publishing papers submitted for presentation at future CIRP General Assemblies. **I encourage you to start considering the submission of your best work for presentation at the 76th CIRP General Assembly in 2027**. Please remember that the CIRP Annals are not only a record of our past achievements, but also a platform for shaping the future of research in production engineering.

Lastly, I ask all CIRP Members and Research Affiliates to please contribute their time and expertise in a timely manner, when invited to serve as reviewers for the new CIRP Annals.

Not only is this an important indicator of 'good citizenship' within CIRP, but it is also critical to ensuring that <u>all</u> members of our academic community share the workload and responsibility of advancing the quality and success of our flagship publication, the CIRP Annals, well into the future!

From the CIRP Journal of Manufacturing Science and Technology

(by Prof. Yusuf Altintas, Editor-in-Chief)

Dear CIRP Community:

The journal has 24 Associate Editors who represent all CIRP STCs, along with 52 editorial review board members, all of whom are esteemed CIRP colleagues. Our streamlined review process ensures the thorough evaluation of papers within a three-month timeframe, and contributors to the review process are duly noted by CIRP and acknowledged by the journal. With a paper rejection rate of 87%, our commitment to maintaining high standards is evident.

Notably, the impact factor has seen a commendable increase from 3.56 in 2021 to 5.4 in 2025. Additionally, our cite score has surged from 4.9 in 2021 to 10.1. The journal is now at Q1 class and it is among the highest ranking venues in manufacturing engineering. To ensure the quality of reviews, our editorial team exercises discretion, desk-rejecting 80% of submitted papers to prevent overburdening our dedicated reviewers. The journal owes its success to its founding editor Prof. Laszlo Monostori, past editor Prof. Bernhard Karpuschewski, associate editors and dedicated reviewers who are all volunteers.

We extend an earnest invitation to CIRP members to submit their articles to the CIRP Journal of Manufacturing Science and Technology. Your contributions play a vital role in maintaining the journal's high standards. Furthermore, we greatly appreciate the willingness of CIRP members to accept review invitations extended by our Associate Editors

Yusuf Altintas, Editor-in-Chief,
CIRP Journal of Manufacturing Science and Technology

CIRP LinkedIn Channel

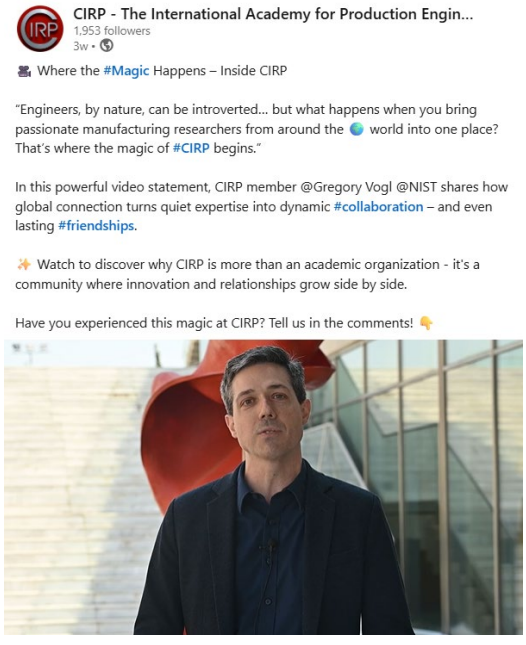
(by B. Denkena)

Recognizing the growing importance of social media for scientific communication, community engagement, and collaboration with industry, CIRP has initiated structured efforts to develop a presence on LinkedIn in late 2024. Starting with a relatively small community of 885 followers in December 2024, the page grew to 3,236 followers by March 2026.

As a first step, a new content team consisting of nine members was established. The team brings together representatives from different CIRP affiliations and various countries, ensuring an international perspective and diverse expertise. This structure enables the creation of relevant and engaging content while reflecting the global character of CIRP.

At the beginning of the work, the team defined several key content categories that guide the development of posts. These include: About CIRP, Publications, Projects, Events, from Industry, and Awards. The aim is to present a comprehensive overview of the activities and achievements of the CIRP community. In addition, the team agreed that the published material should ideally align with the main objectives and research priorities of CIRP, such as sustainability and current research topics including medical technology, aerospace, and artificial intelligence.

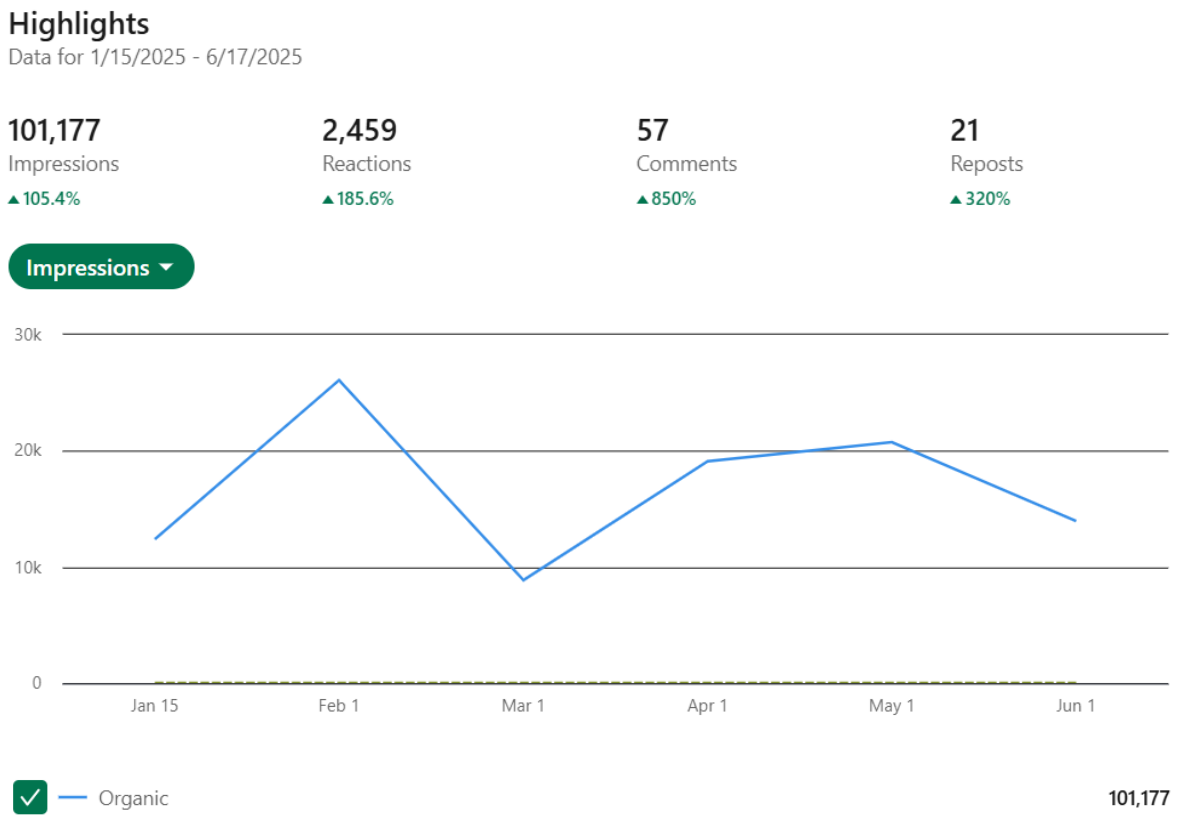
The content strategy is based on a mix of image and video posts in order to create variety and increase engagement. Particularly noteworthy are the short video statements recorded during the 73rd CIRP General Assembly in Thessaloniki in 2024 (refer to example screenshot). In these videos, our members share their personal perspectives on what CIRP means to them and what value they gain from being part of the community. These authentic insights help communicate the unique spirit of CIRP and strengthen the sense of community among members while providing external audiences with a better understanding of our organization.



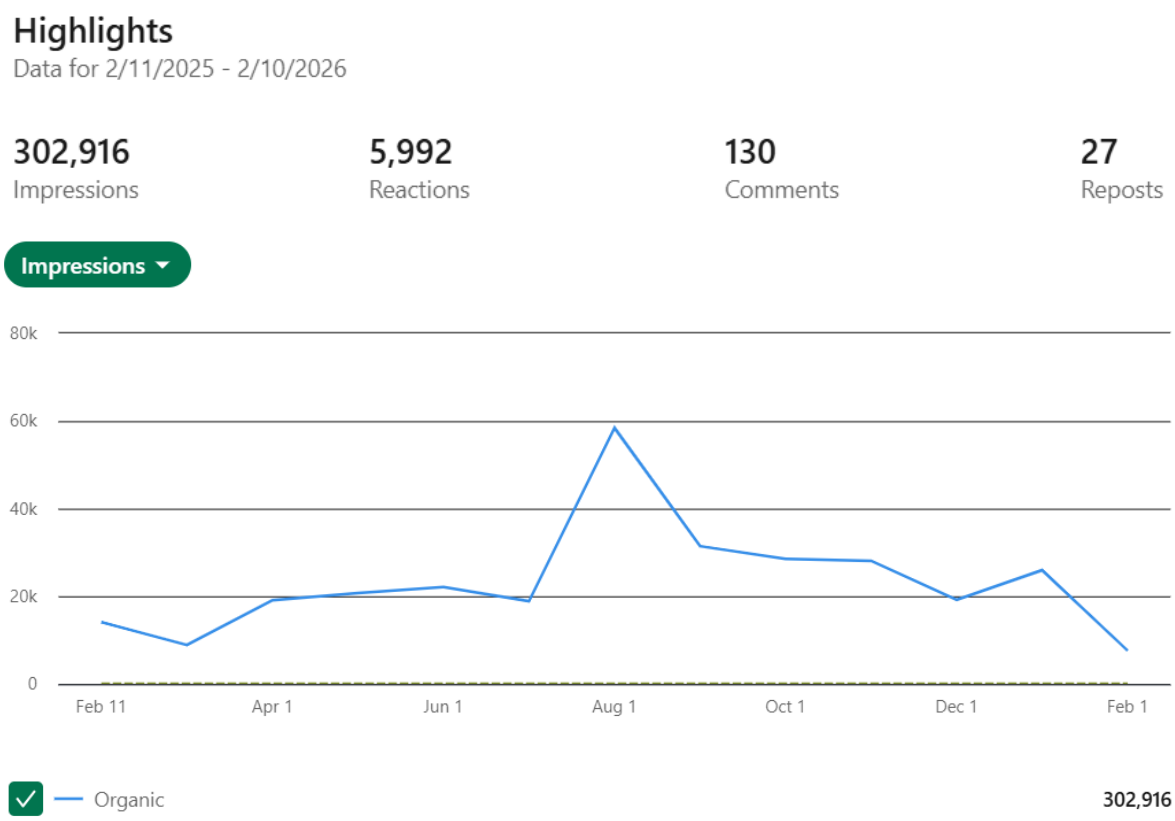
Operationally, the team aims to maintain a continuous presence on LinkedIn by posting around two to three times per week. The first post developed by the content team was published in January 2025. In total, more than 100 posts have already been published on the page. Each post includes a clear call to action at the end to encourage interaction, discussion, and engagement within the community.

The development of the LinkedIn channel shows clear and measurable growth. Before the start of the structured content activities, the CIRP LinkedIn page had 885 followers (December 2024). By June 2025, the number of followers had increased to 1,953. As of 13 March 2026, the account has reached 3,236 followers, demonstrating continuous growth within a relatively short period of time.

The reach of the content has also developed positively. In the first half of the year, the posts generated 101,177 impressions (January 15 to June 17, 2025).



Over a one-year period (February 11, 2025, to February 10, 2026), the total number of impressions reached 302.916. These numbers illustrate that the content is becoming increasingly visible and relevant to the target audience.



Overall, the development of the CIRP LinkedIn account shows that a solid foundation has been established. The structured work of the Content Team and the consistent publishing rhythm have created a measurable upward growth trend. The positive development in follower numbers and reach confirms that the chosen strategic direction is effective. At the same time, there is still considerable potential for growth. For example, large research institutes in our membership have up to five times more followers on LinkedIn than CIRP.

In addition, the content of the page is mainly created by the established content team. We are therefore calling for greater participation and encouraging more members of the CIRP community to contribute ideas, stories, and materials for LinkedIn. Either as a permanent member of the team or by sending individual contributions by e-mail to:

content@cirp.net

Together, we will be able to strengthen our strategic focus, actively engage our community, and expand our content offerings to continue growing. This will make our LinkedIn page an even more impactful platform in the long term, strengthening the CIRP network, increasing our international visibility, and promoting collaboration between science and industry.

CIRP School

(by Alessandro Balsamo)

After over a year of preparation, the concept of a CIRP School launched by former President Prof. Fengzhou Fang has become a reality ready for implementation to interested members of the CIRP community. CIRP School Sessions are either independent events or in conjunction with other CIRP events, and are aimed to attract promising early career scientists in manufacturing engineering.

The main characteristics of CIRP School Sessions are the following:

- Duration: 5 days typically, possibly shorter if linked to another CIRP event.
- Attendance: PhD students, postdoctoral fellows, Corporate Members, Research Affiliates, no restriction to other categories; cap on registrations set by the organizer based on available facilities to ensure efficient and dynamic teaching and learning.
- Content and structure:
  - Focus on specific manufacturing topics, including cross-cutting emerging ones.
  - Dynamic learning approach, ideally a mix between classes and lab/hands-on practices.

- Finance:
  - Being intended for students and junior scientists, fees should be kept low at an affordable cost for a five-day event.
  - Participants cover their own expenses.
  - Instructors are selected by the organizer mostly among CIRP Fellows, with no remuneration other than cost reimbursement.
  - No levy is due to the CIRP.
  - The organizer is responsible for the finance.

The Council approved the workflow for approving new CIRP School Sessions, which is very similar to that of CIRP Conferences:

1. Proposals are received by the Secretariat ideally 18 months prior to the Session date. The proposal includes the proposing fellow, the topic, the competent STC or Cross STC, an overview of the sessions, the venue and the date. A form is available on the website (My Dashboard > Download Administrative Documents from CIRP Office (Admin Office section) > Application Form Process for a CIRP School (from the “CIRP Conferences (and sponsorships), CIRP Schools documents” heading).
2. The CIRP Task Force double checks the proposals and forwards them to the supporting STCs or Cross STC. This guarantees that all essential information is available and that there are no calendar conflicts overall, and there is an opportunity for possible suggestions in this starting stage of the School.
3. The supporting STC or Cross STC discusses and approves the Session at their first upcoming meeting. This ensures the scientific quality.
4. The Liaison Committee is informed at the same meeting series and raises possible suggestions and concerns. This ensures overall harmonization.

5. The Council assesses the proposal for approval during the same meeting series, considering possible comments from the Liaison Committee.

The organizer of a CIRP School Session is required to submit a report to the CIRP Office within one month after the Session. The report template is also available on the CIRP website (from the administrative documents section under “My Dashboard”).

The first CIRP School Session was successfully held by Prof. Konrad Wegener in Zurich in February 2025. The maximum capacity of 14 was reached with 28 registration applications received. See separate article in this newsletter for more details.

Three other School Sessions have been also offered, totaling four CIRP School offerings to date:

1st	Precision and compensation of machine tools	Konrad Wegener	Zurich (CH)	2025-02-03/07
2nd	Manufacturing for sustainability	Luca Settineri, Paolo Priarone	Turin (IT)	2025-11-03/07
3rd	Manufacturing and measurement of freeform optics	Fengzhou Fang	Tianjin (CN)	2026-05-11/16
4th	How to design a design course	Tetsuo Tomiyama	Tokyo (JP)	2026-03-23/27

The first two Sessions were approved before the workflow was adopted by the Council, and the fourth with a simplified workflow to match the proposed date. The third was approved regularly, as will be all subsequent CIRP School sessions.

Further information on the coming School Sessions will be announced on the CIRP Website Events > CIRP School.

From the Corporate Members Advisory Group (CMAG)

Dr. Luis Uriarte
Chair

Dr. Youichi Nonaka
Vice-Chair

Dr. Serafettin Engin
Secretary

The Corporate Members Advisory Group (CMAG) meeting took place at the General Assembly in Stockholm on August 19th. Following the welcome and opening remarks by Dr. Murtezaoglu (CMAG Chair), CIRP President, Prof. Denkena addressed the CMAG participants, emphasizing the importance of continuing to intensify the industry and academia collaborations within CIRP.

This was followed by a presentation by Dr. Gani Ganiyusufoglu, past Chair of CMAG, titled:

“The new technological world order at the horizon - Conclusions from my 20 years in China.”

Afterwards, new CMAG members gave short presentations about their companies:

1. CERATIZIT, “Tooling a Sustainable Future”, by Dr. Uwe Schleinkofer.

2. Saab AB, “Innovating for resilience, security, and sustainability”, by Dr. Anna Malm, Mr. Richard Lindqvist.

Additionally, the following new CMAG members were announced:

1. Hanwha Aerospace (Korea).

2. Kawasaki Heavy Industries, Ltd. Aerospace Systems Company (Japan).

The meeting continued with four technical presentations:

1. “Development of process digitization (PDx) at Makino - How is it possible to transfer knowledge efficiently and sustainable into products?”, by Dr. Thorsten Augspurger, Makino Europe.

2. Precision machining of innovative diamond-SiC bearings for subsea pumps – A comparative study of grinding, ultrashort pulse laser machining, and wire EDM”, by Prof. Bahman Azarhoushang, Steinbeis-Transferzentrum.

3. “Sustainable coating solutions for high-performance cutting tools”, by Dr. Ivan Iovkov, Oerlikon Surface Solutions AG.

4. “AI-based mobile collaborative robotic system for the coating of aircraft components”, by Dr. Parth Rawal, Composites United / Fraunhofer IFAM.

In the final section of the meeting, Prof. Erkorkmaz (CIRP Technical Secretary) invited all CMAG participants to join him in thanking Dr. Murtezaoglu (CMAG Chair) for his outstanding leadership and his commitment to advancing CMAG on multiple fronts (technology, sustainability, diversity, and industry and academia cooperation) during his six years of dedicated service as a CMAG officer.

All participants of CMAG expressed their sincere appreciation to Dr. Murtezaoglu.


Dr. Yavuz Murtezaoglu.

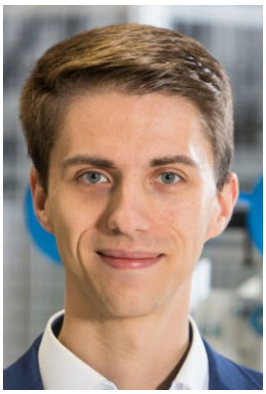
Afterwards, the elections for new CMAG officers took place. The following new officers were elected by CMAG members, and later approved by the CIRP Council:

- Dr. Luis Uriarte – New Chairman
- Dr. Youichi Nonaka – New Vice-Chairman
- Dr. Serafettin Engin – New Secretary

Corporate members are organized by 171 organizations and companies.

From the Research Affiliates

Message from the RA Steering Committee



Dr. Benjamin Montavon
Chair

Prof. Haizea Gonzalez Barrio, Vice-Chair

Prof. Florian Stamer
Secretary

Dear Research Affiliates, dear CIRP Colleagues,

The Research Affiliates (RA) program continues to be a vibrant and influential platform for early career production engineering scientists pursuing careers in academia or industry. In 2025, nine new colleagues from five countries joined the RA group, bringing the total membership to 54. The RA Board warmly encourages potential candidates who are not yet part of the program to consider nomination and to engage actively together with their mentors. The RA community continues to strengthen its role in fostering international collaboration and supporting early-career researchers within CIRP.

2025 again offered many opportunities for exchange and collaboration, including the General Assembly in Stockholm, the RA Workshop in Gothenburg in August, and the CIRPe online event in October. Looking ahead, several RA-led events have already been endorsed:

- 2026 RA Workshop, Nanjing and Suzhou, China — June 21–27
- 2026 CIRPe Conference, online and on-site in Singapore — October 13–16
- 2027 RA Workshop, Bilbao, Spain — June 21–23
- 2027 CIRPe Conference, online — September (exact date to be confirmed)

During the 2026 Winter Meetings, the RA Board proposed five strategic action fields to guide the program's development in the coming years. The RAs present expressed unanimous support, complemented by positive feedback from the CIRP Board. Specific measures within these action fields will be defined in due course.

One change will already take effect at the next General Assembly: the RA meeting will move from Saturday to Thursday to make participation more family-friendly. The Board looks forward to welcoming many CIRP colleagues and RAs in Turin.

The RA Steering Committee.

17th CIRP RA Workshop 2025

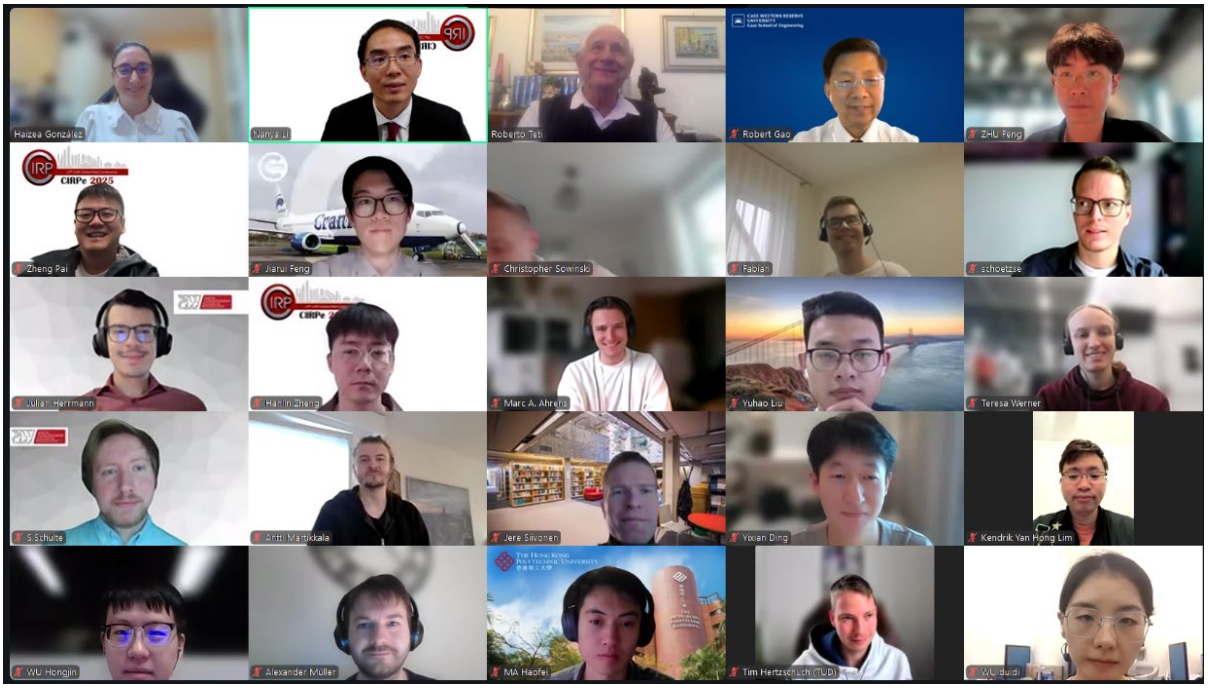
The 2025 RA Workshop was hosted by Chalmers University of Technology, Gothenburg, Sweden, from August 24 to 26. Dr. Roham Sadeghi Tabar and Dr. Amir Malakizadi organized a highly collaborative and extraordinarily enjoyable event, also thanks to SKF, the Wingquist Laboratory, and the Metal Cutting Research Centre (MCR) at Chalmers as sponsors. This year's workshop gathered 18 RAs and guests representing Sweden, China, Germany, UK and Spain. The program featured insightful keynote presentations delivered by Prof. Rikard Söderberg (STC Dn) and Prof. Peter Krajnik (STC C), CIRP Fellows at Chalmers.

A key focus of the workshop was the development of new collaboration initiatives by the RAs. Through a structured workshop session, three groups identified shared

research interests and emerging themes, including physics-based digital twins, AI-enhanced process monitoring, and sustainable product and process development.

Participants also experienced west Sweden's strong industry and culture through visits to Volvo Trucks' final assembly line and SKF's advanced bearing production, along with a city boat tour, a visit to the Volvo Museum, and shared Swedish cuisine.

13th CIRP Global Web Conference 2025



The 13th CIRP Global Web Conference (CIRPe 2025) was convened online from October 16 to 18, 2025 and jointly organized by Prof. Nanya Li (RA, Nanjing University of Aeronautics and Astronautics, China), and Prof. Pai Zheng (AM, The Hong Kong Polytechnic University, China). The event brought together the global research community to explore the timely theme of "AI in Smart Manufacturing." The conference gathered significant interest, receiving 109 abstract submissions from 14 countries leading to 74 full papers accepted after review. Attendees were treated to a series of exceptional Keynote Presentations from CIRP Fellows, including Prof. Roberto Teti, Prof. Lihui Wang, Prof. Robert X. Gao, Prof. Atsushi Matsubara, and Prof. S.K. Ong. There were two parallel technical sessions on all three days covering broad topic areas of the CIRP community, with notable focuses on: AI-driven additive manufacturing, computer vision for production, predictive maintenance, and lifecycle management. The conference concluded with an online Best Paper Awards Ceremony, honoring the authors of 10 papers for their outstanding research.

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.

2026 Keynote Papers submitted

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: jc.outeiro@charlotte.edu

STC E
Laser based manufacturing for electric power train - 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 precision 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 automation - 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 and regenerative medecine - 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 cutting fluids in metal-machining 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 E
Locally engineered materials by hybrid additive manufacturing – M. Sealy (2) -
Contact: msealy@purdue.edu

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 thin-walled 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 for production machines - J. Mayr (2) -
Contact: josef.mayr@inspire.ch

STC S
Traceability and uncertainty in characterisation of mechanical and tribological properties of technical surface layers - M. Galetto (2) -
Contact: maurizio.galetto@polito.it

Cross-STC
Microstructure-driven design of forming, additive manufacturing and cutting operations - Lukasz Madej (1) - Contact: lmadej@agh.edu.pl

2028 Keynote Papers proposals

STC A
The role of digital information platforms for circular economy - M. Colledani (1) - Contact: marcello.colledani@polimi.it

STC C
Role of additive manufacturing in cutting - M. Weigold (2) - Contact: weigold@ptw.tu-darmstadt.de

STC Dn
The future of model-based engineering for design and production engineering - B. Schleich (2) - Contact: schleich@plcm.tu-darmstadt.de

STC E
In space manufacturing - A. Malshe (1) - Contact: amalshe@purdue.edu

STC F
Metal forming for biomedical applications - J. Cao (1) - Contact: jcao@northwestern.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

STC O
Foundation models for value creation in manufacturing systems - F. Ansari (2) - Contact: fazel.ansari@tuwien.ac.at

STC P
Coordinate measurements with machine tools: traceability and uncertainty assessment - U. Mutilba (2) - Contact: Unai.mutilba@tekniker.es

STC S
Surface engineering in additive manufacturing of smart and multi-functional composite materials: process, characterization, integrity, and functionalization - N. Michailidis (1) - Contact: nmichail@auth.gr

2029 Keynote Papers proposals

STC A
Embodied AI for Assembly Systems - R.Gao (1) -
Contact: robert.gao@case.edu

STC E
Recycling production waste through additive manufacturing - F. Zanger (2) -
Contact: frederik.zanger@kit.edu

STC G
Abrasive machining for advanced semiconductor components - T. Bergs (2) -
Contact: t.bergs@mti.rwth-aachen.de

STC M
Trajectory generation for CNC machine tools - B. Sencer (2) -
Contact: burak.sencer@oregonstate.edu

STC P
Digital Twins of measurement processes for quality control in precision manufacturing - M. Galetto (2) - Contact: maurizio.galetto@polito.it

CIRP School

Precision and Compensation of Machine Tools (Feb 2025, Switzerland)

IWF at ETH Zürich and the knowledge and technology transfer organization in Switzerland **inspire** AG have a broad research track record, teaching competence, and industrial experience in assessment and improvement of the quality of machine tools (MTs), which was intended to share, through this CIRP School, with the newer generation of engineers in manufacturing. Dealing with manufacturing machines as developer, builder, and user, it is important to understand the basic technologies, tools, and methods on measuring, simulation, and analysis of the behavior of MTs, and from this knowledge, the error compensation for MTs. While for the first call the interest seemed limited, the second call found strong resonance and 28 persons applied, so that on a first-come first-serve basis 14 originally registered. Ultimately, the course was offered with 12 attendees who were able to make the in-person travel to Zürich.

Team event Monday evening
Zunfthaus zur Zimmerleuten

Thermal compensation and R-test

At least a 2nd offering of this CIRP School would be recommended, especially as the preparation of the lectures, labs, and documentation took a lot of work, and are now ready for improvement and relaunch. The chosen topic for this inaugural CIRP School is of highest importance for different reasons:

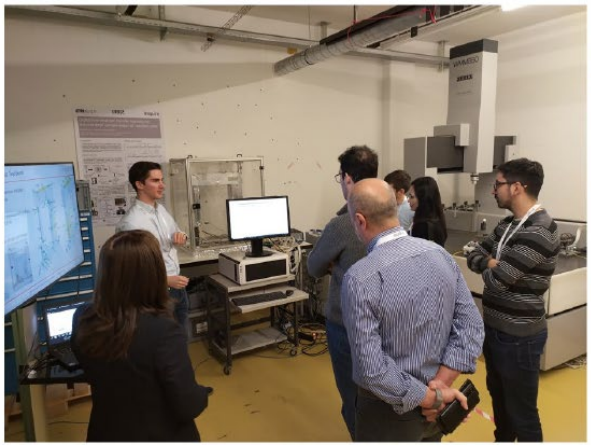
- MT technology is a mature technology and only with sound scientific means and tools, and not merely trial-and-error, can progress be achieved.
- MT manufacturers are under extreme cost pressure, so that all possibilities for the trade-off between quality, cost, and productivity must be exploited. The requirements for products become stricter and especially in the high-end section of the MT market, they approach the limits of manufacturing capabilities.
- As a new technology artificial intelligence (AI) with machine learning (ML) becomes a powerful tool, MTs' capabilities and limits need to be known by MT engineers, and need to be further explored by science, on the basis of sound knowledge.
- Furthermore, a general understanding of MT quality and capabilities is required for each and every manufacturing engineer and scientist in the field.

Hence, the inaugural (1st) CIRP School was offered for early career scientists diving into the topic of MT technology and manufacturing, and for industrial colleagues

wishing to refresh their knowledge with the most recent technological developments. This CIRP School has targeted PhD students and postdoctoral fellows and has also been open to Research Affiliates and colleagues from industry, especially Corporate Members.

The increase of machine accuracy as required by the diagram of Taniguchi requires continually more expensive measures when solved mechanically. Compensation is therefore rated as the relief from this pressure. Today there is no way around compensation for high precision and ultra-precision MTs. However, it is impossible to discuss compensation without the basic knowledge and terminology of precision and measurement technology, which is provided therefore at the beginning of this CIRP School session. The relevant standards, ISO 230, ISO 10791, ISO 10360 are discussed. Basics of measuring technology, uncertainty estimation as stipulated by GUM (Guide to the expression of Uncertainty in Measurement) and error budgeting are provided.

Teststand for thermal behavior and compensation



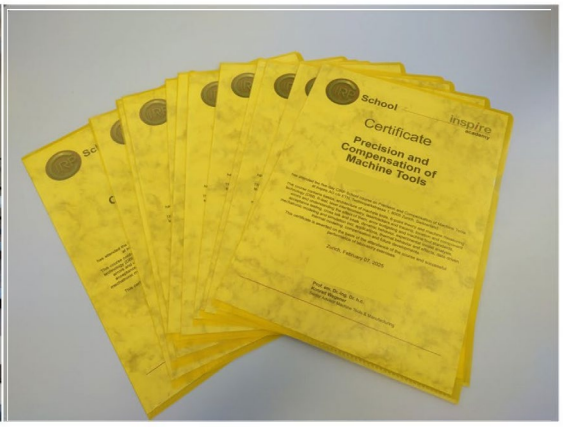
Thermal measurements on swiss type lathe

Compensation needs to be supported by models for machine behavior which can be exploited in real time. Models of different kinds, like FEM with model order reduction, artificial intelligence, and phenomenological representation of the MT's physical behavior, are covered. Compensation is only possible for repeatable errors, but can be applied to kinematical, dynamical, thermal, and gravitational deviations of MTs. For the

former three of these error compensations, a dedicated theory block is included. Teaching real competences is the aim of this course. This is the reason why a large share of the time is dedicated to hands-on practice of the provided theory.

Besides testing on real MTs, teaching setups have been developed to see the effects of the errors and means to remove them. The labs cover axis errors and their measurement with a double ball bar test on a distorted machine, measurements with R-test and a straight edge on a real MT, and experimental modal analysis on a desktop machine, which were performed and integrated into the participants' hands-on learning. For the thermal analysis of the machine, the equipment of machines with temperature sensors and the geometrical measurement were demonstrated. The demonstration on mechatronic analysis demonstrated how the controller parameters influence the behavior of the MT, based on an order-reduced model of the machine together with a model of the axis controllers. The labs on thermal behavior and compensation introduced the setup of data-driven self-learning models for the thermal behavior, where measured raw experimental data were provided and the participants got the task to clean and filter the data and train a neural network.

Besides the provision of knowledge and competence, the CIRP School promoted the exchange of ideas, networking, and cooperation. A team-building event, as in this case the welcome dinner, and sufficiently long coffee and lunch breaks, are essential for this important benefit to occur. At the end of the CIRP School session, a certificate was handed out to the participants. The photos accompanying this article give an impression of this inaugural CIRP School.



CIRP School: Manufacturing for Sustainability (Nov 2025, Italy)

From November 3rd to 7th 2025, Politecnico di Torino (Italy) hosted the 2nd CIRP School on "Manufacturing for Sustainability". The event was organized under the academic coordination of Prof. Settineri and Prof. Priarone. This edition focused on providing a comprehensive analysis of sustainable manufacturing, integrating engineering principles with management strategies and social considerations.

The School was attended by 14 participants representing institutions from 5 countries: Luxembourg, Germany, Italy, the United Kingdom, and China. Half of the cohort was composed of PhD students, followed by postdoctoral researchers and research fellows. The attendees were mainly early career researchers. Remote participation was arranged for one attendee due to specific circumstances.

The 5-day program, comprising 40 hours of activities, was structured to cover the three pillars of sustainability through a combination of theoretical lectures and technical laboratory visits. The curriculum involved seven lecturers and addressed technical, organizational, and social aspects of manufacturing. The activities began with a presentation by Prof. Settineri on the hosting institution and on CIRP, given that more than 70% of the participants had never attended a CIRP event. The sessions then addressed the fundamentals of manufacturing for sustainability in a module led by Prof. Priarone. This introductory module defined the scope of the topics, emphasizing the necessity of an interdisciplinary and multi-level approach in line with the CIRP vision on sustainability. Subsequently, the focus shifted to quantitative methods with the module on "Methods and tools for sustainability assessment" led by Prof. Demichelis. This section provided a detailed examination of Life Cycle Assessment (LCA) methodologies.

The integration of sustainability within the value chain was a core component of the second day. Prof. Tuni delivered a comprehensive overview of "Circular and sustainable supply chain management", exploring how circular economy principles, such as closed-loop logistics and reverse supply chains, can be implemented to minimize waste and extend product lifecycles, supported by the assessment of an

industrial case study. Subsequently, Prof. Ravetti introduced the concept of "Sustainable business management". This session examined the economic implications of sustainability, discussing business models that align profitability with environmental stewardship, such as Product-as-a-Service strategies and servitization.

A significant portion of the curriculum focused on "Enabling technologies for the digital and sustainable transition" and the presentation of case studies and best practices, to show examples of translating research into tangible industrial impacts. Complementing the technical and economic modules, the School addressed the social dimension of sustainability within the Industry 5.0 framework. Prof. Simeone addressed issues and perspectives while focusing on human-centric manufacturing, ethics, and the evolving role of the operator in increasingly automated environments.

To provide operational insights into the topics discussed, the program included technical visits to three advanced facilities located in the Torino area, two of them at Politecnico di Torino (@PoliTO). The first visit took place at CIM4.0 (Competence industry Manufacturing 4.0), a national competence center supporting the digital transformation of the manufacturing sector. During the tour, participants observed the implementation of additive manufacturing pilot lines and digital infrastructures, highlighting the role of competence centers in transferring technology from research to industry. The second facility visited was IAM@PoliTO (Integrated Additive Manufacturing), an inter-departmental center specialized in metal additive manufacturing. The final technical tour was conducted at J-Tech@PoliTO (Advanced Joining Technologies), a laboratory focusing on innovative joining solutions for dissimilar materials.

The week concluded with a "Sustainability Challenge" coordinated by Dr. Catalano. In this session, participants were asked to present their own research topics to the cohort and frame them within the sustainability perspectives presented during the week. Attendees were tasked with identifying specific levers and obstacles to implementing sustainability principles in their respective fields, considering technical, supply chain, and social dimensions. The primary objective of this exercise was to facilitate the direct translation of learned concepts into their daily work and research projects, while also

fostering the identification of possible synergies, collaborations, and networking opportunities among the participants.

The learning outcomes were verified through a final written exam consisting of 18 multiple-choice questions covering the breadth of the followed curriculum.

Beyond the academic curriculum, the School fostered a strong sense of community through dedicated networking opportunities. A highlight of the week was the social dinner held mid-week in the historic center of Torino. This event offered participants the opportunity to enjoy traditional local cuisine, creating a convivial atmosphere that greatly enriched the overall experience. This personal interaction proved as valuable as the technical sessions, strengthening bonds among the international cohort and laying the groundwork for future professional relationships.

The feedback collected from the participants indicated a high level of satisfaction regarding the relevance of the topics and the expertise of the teaching staff. The survey results showed that the attendees considered the knowledge acquired applicable to their current research activities. The 2nd CIRP School on "Manufacturing for Sustainability" effectively provided a multidisciplinary framework for an in-depth exploration of the technical and organizational challenges of the green transition in manufacturing.

Our CIRP Conferences

35th CIRP Design Conference (Apr 2025, Greece)

The engineering and design community faces pressing global challenges that call for adaptive innovation. Achieving sustainable growth, high-quality employment, climate protection, and ensuring efficient use of resources are not only challenges, but also catalysts for the advancement of modern manufacturing and design practices. In today's volatile landscape, manufacturing must be redefined to integrate emerging technologies, flexible structures, and value-driven processes.

As emphasized by the 35th CIRP Design Conference 2025 under the theme "Reshaping Design towards Adaptive, Human-Centric and Sustainable Products, Processes, and Systems", future manufacturing systems must evolve into dynamic, human-aware, and environmentally responsible ecosystems.

With the ongoing 4th Industrial Revolution, manufacturing is becoming highly interconnected on a global scale. Digital technologies, such as the Internet of Things (IoT), Cyber-Physical Systems (CPS), and Big Data Analytics, are revolutionizing the factory floor. Smart machines, capable of autonomous communication with each other and with human operators, are enabling new forms of production agility and efficiency. To stay competitive and resilient, manufacturing companies must embrace full

digitalization across horizontal and vertical operations, while also adapting to human-centric and sustainable business models.

The transition to Industry 5.0, and even Society 5.0, requires not only technological innovation, but also rethinking how we educate and empower the next generation of engineers. Emerging design paradigms prioritize the integration of Artificial Intelligence, Digital Twins, Augmented-Virtual Reality, and cognitive systems into product and process development. Engineers must be equipped with digital fluency, cross-disciplinary collaboration skills, and a deep understanding of human–machine interaction, user behavior, and lifecycle thinking.

Research in manufacturing design must continue to foster knowledge sharing and advance the development of intelligent, flexible, and sustainable systems. The scientific community is expected to contribute breakthrough solutions, transforming digital innovation into actionable knowledge that benefits both industry and society.

CIRP Design 2025 reflects this global vision, promoting a platform for forward-thinking ideas at the intersection of engineering design, automation, and sustainable innovation.

Three keynote presentations and 175 regular papers have been accommodated in the 11-hour daily schedule for all 3 days of the conference. The keynote papers were presented at the beginning of each day in a plenary session, providing insights into both technological developments and industrial challenges:

- Keynote 1: Prof. Dimitris Kyritsis (EPFL) “Information modelling framework for addressing information fragmentation in industrial systems design”
- Keynote 2: Prof. Angelos Markopoulos (NTUA) “Additive manufacturing for bioengineering innovation: state-of-the-art insights, emerging perspectives, and roadmap ahead”
- Keynote 3: Dr. Christos Vidakis (Deloitte) “Industrial cyber threat landscape and lessons learnt from the front line”

175 papers were presented in the actual scientific program organized in 33 sessions covering the following research topics:

1. Big data analytics in design of components, products, processes, machines & manufacturing systems
2. Collaborative design in complex products & services using cloud technologies
3. Digitalization and product development cycle – Product Service Systems (PSS)
4. Integration of customer in the product/process design
5. Design and development of capabilities for smart products & services
6. Smart vehicles design
7. Semantics in design of products & services
8. Ecofriendly design
9. Internet of things and smart sensing
10. Artificial intelligence methods and big data analytics for smart production systems
11. Design for bioinspired manufacturing
12. Biologicalization and product design
13. Design for sustainability
14. Human-machine intelligent cooperation

15. Advanced product service system engineering
16. Human-centric smart manufacturing systems towards Industry 5.0 & Society 5.0
17. Human digital twin (HDT)
18. Augmented Reality (AR) / Virtual Reality (VR) / Metaverse towards sustainable manufacturing

Deep appreciation is due to the people that contributed to the realization and success of the 35th CIRP Design Conference. Special thanks are extended to the IPC Committee, the Co-Chairs, Associate Prof. P. Stavropoulos, Associate Prof. Sotiris Makris, Dr. Kosmas Alexopoulos, and Dr. George Michalos. A sincere gratitude goes to the authors of the papers for their high expertise, the time invested in this collaborative process, and for their contributions; and of course, to the researchers, the volunteers, and personnel of the Laboratory of Manufacturing Systems and Automation (LMS) for their dedication and contribution to the success of the 35th CIRP Design Conference, 2025.

32nd CIRP Conference on Life Cycle Engineering (LCE, Apr 2025, UK)

The 32nd CIRP Life Cycle Engineering Conference (LCE 2025) took place from 6th to 9th April at The University of Manchester, chaired by Professor Paul Mativenga and Dr. Alejandro Gallego Schmid. The event marked a major milestone in the conference's history, drawing an impressive 271 participants from 31 countries — the largest attendance to date.

Over the course of three days, the conference covered 220 high-quality research papers across four themes: Life Cycle Assessment, Circular Economy, Decarbonisation, and Manufacturing for Sustainability. These sessions were complemented by inspiring keynote speeches from world-renowned external experts, including Professor Julian Allwood and Professor Christoph Hermann, as well as The University of Manchester's Net Zero-focused researchers, Professors Adisa Azapagic and Prof Aoife Foley.

A special highlight was the welcome address by President and Chancellor of The University of Manchester, Professor Duncan Ivison, who spoke passionately about the future of higher education and the evolving role of life cycle engineers. His insights set a forward-thinking tone for the days ahead.

The conference also provided a rich cultural experience.

The Welcome Reception took place in the inspiring Fossils and Living Worlds Galleries at the Manchester Museum, while the academic sessions were held in the state-of-the-art Nancy Rothwell Building. The conference concluded with a memorable Gala Dinner at the Old Trafford Football Ground.

Our heartfelt thanks go to the organizing and scientific committees, teams from the Laser Processing Research Lab (LPRL), Digital Manufacturing Lab (DML), 3D Printing Lab, High Voltage Lab, and Hydro Lab that provided access to labs, as well as to the outstanding team of Mollie and Sakinah, Janine and PhD student and postdoc ambassadors whose efforts helped deliver an exceptional event.

In a new addition this year, we introduced in addition to the Conference Leo Award, four Best Paper Awards, setting a new tradition for CIRP. These covered the four themes of the conference.

The first Plenary Keynote was presented by Professor Adisa Azapagic - MBE (Member of the Most Excellent Order of the British Empire), Professor of Sustainable Chemical Engineering, Director Sustainable Industrial Systems Group, The University of Manchester, the title was – “Systems, life cycles and the circular economy: Identifying sustainable solutions”

Professor Dr.-Ing. Christoph Herrmann, Professor for Sustainable Manufacturing & Life Cycle Engineering, Institute of Machine Tools and Production Technology, Technische Universität Braunschweig, delivered the Plenary Keynote: “All engineers should be life cycle engineers with a mindset for absolute sustainability.” This was supported by a peer reviewed paper with the same title.

Professor Julian Allwood, FREng, Professor of Engineering and the Environment, Director of the Use Less Group, University of Cambridge, delivered the Plenary Keynote: “Innovations that reduce material demand at speed and scale.”

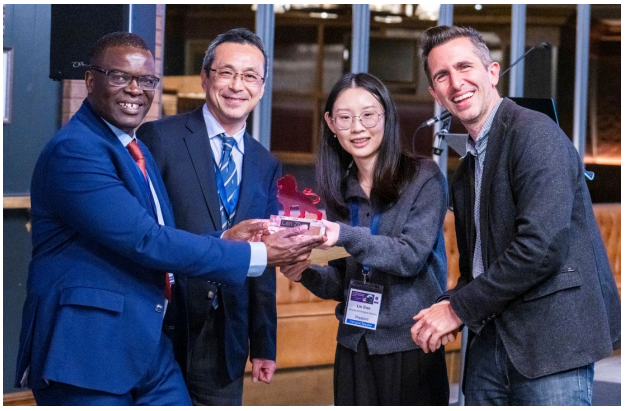
Professor John Sutherland, CIRP Fellow and Conference Sponsor chaired the Opening Session and Plenary Keynotes and was involved alongside other CIRP Fellows (Professor Joost Duflou, Professor Daniel Brissaud and Professor Sebastian Thiede) in the Leo Best Paper Award Selection.

The Welcome Reception was held in Manchester Museum in the Living Worlds and Fossils Galleries. The Museum is one of the cultural institutions that belong to The University of Manchester. Living Worlds and Nature’s Library display some of the museum’s collections of natural history specimens – from zoology, entomology, botany and earth sciences – to raise awareness of the incredible diversity of life on Earth. The Fossils and Dinosaurs galleries are where you come face-to-face with prehistoric giants Stan the

Tyrannosaurus rex and April the Tenontosaurus and learn what it means to think like a paleontologist. The story of our changing world is woven throughout the displays. The galleries aim to inspire a deeper appreciation and connection with nature and encourage positive actions that benefit our planet and our health and well-being. The skeleton of a sperm whale has watched over the gallery for over 130 years. This was a perfect setting to begin a conference on life cycle engineering.

The conference dinner was held on Tuesday at Old Trafford. Old Trafford Stadium is the world-famous home of Manchester United. Delegates paused for pitch side photos after touring the football museum and before sitting down for dinner in the international suite.

Conference Co-Chairs (Professor Paul Mativenga on the left and Dr Alejandro Gallego Schmid on the right) and STC A Chairperson and also LCE 2026 co-chair Professor Yasushi Umeda (second from left) present the Leo Award 2025 at Old Trafford, to Lan Zhao, of Nanyang Technological University, Singapore for their paper, “Waste-to-Resource Database Construction for Industrial Symbiosis Using Large Language Models“, authors, Lan Zhao, Yajuan Sun, Gaoxi Xiao.



LCE 2025 was more than a conference—it was a celebration of global collaboration, innovative research, and a shared commitment to engineering a more sustainable future. The delegates loved Manchester, and in the end, we handed over the conference to Kamakura for 2026.

58th CIRP Conference on Manufacturing Systems (CMS, Apr 2025, The Netherlands)

The 58th CIRP Conference on Manufacturing Systems was held from April 13 to 16, 2025, at the University of Twente in Enschede, the Netherlands. Chaired by Prof. Sebastian Thiede and Prof. Eric Lutters, the event gathered over 200 researchers and industry professionals from around the world to exchange insights and developments in context of the conference theme, “next generation manufacturing systems”.

The conference began with welcoming remarks from the Dean of the Faculty of Engineering Technology and the conference chairs, followed by three keynote presentations. Prof. Dr. Simon Lux (University of Münster and Fraunhofer FFB) addressed the global energy transition, with a focus on the European industry and the battery sector as a key example. He emphasized the importance of field labs for developing, demonstrating, and scaling innovative technologies in this area. Thijs Rupert, Managing Director of Demcon Industrial Systems, presented the journey of Demcon from a University of Twente spin-off to a leading high-tech manufacturing company in the Netherlands, highlighting the value of modularization and digital twins in building efficient, future-ready manufacturing systems. Prof. Tullio Tolio and Prof. Aydin Nassehi concluded the welcome session with introducing CIRP and the Scientific Technical Committee ‘Production Systems and Organizations’ (STC O).

Across the three days, the conference featured approximately 200 paper presentations spread over 48 sessions, with most running in five parallel tracks. These sessions

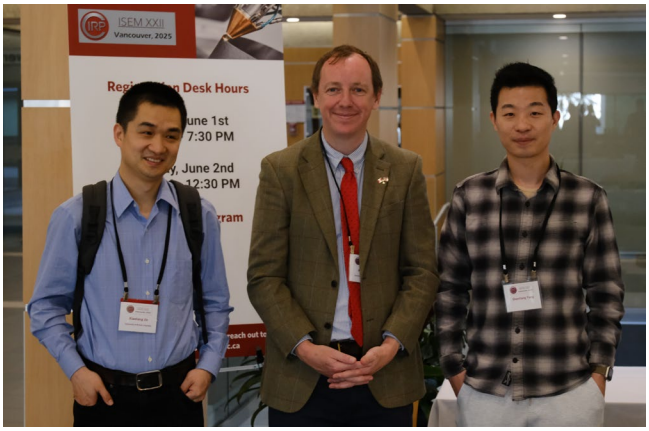
covered a wide range of topics, including smart manufacturing and sustainable production approaches. Contributions also explored predictive maintenance, human-robot collaboration, and the application of artificial intelligence and machine learning in manufacturing environments. Further sessions focused on additive manufacturing, process knowledge and control, manufacturing optimization, and the use of simulation and digital twin technologies. Topics related to logistics, system design, supply chain optimization, and battery production and disassembly were also prominently featured, reflecting the breadth and interdisciplinary nature of current manufacturing system research.

In addition to the technical program, the conference included a series of social events encouraging networking and informal exchange. On the first evening, a welcome reception offered participants the opportunity to meet and connect in a relaxed setting. The second evening featured a network event in the newly established CUBE workshop at the University of Twente. Opened with an interactive presentation on current Dutch Smart Industry research in the NXTGEN program, this event provided further opportunities for exchange right within a modern manufacturing environment. The conference dinner one day later took place at the Twente Airport - a unique venue for further discussions and networking.

Sincere thanks to the scientific committee for their work, and also to all participants for travelling to the Netherlands and their valuable contributions and active engagement throughout the conference. And, of course, big thanks to all the members of the organizing committee - especially Roy Damgrave and Inge dos Santos-Smit - as well as to the dedicated support team from the hosting Department of Design, Production and Management (DPM), all of whom have made CIRP CMS 2025 a successful and memorable event.

22nd CIRP Conference on Electro Physical and Chemical Machining (ISEM, Jun 2025, Canada)

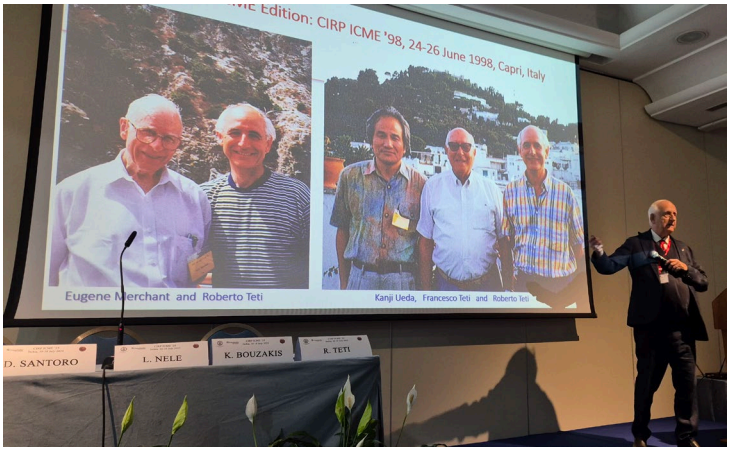
ISEM XXII (June 1-4, 2025, Vancouver) welcomed 104 delegates from 17 countries for a comprehensive exploration of electrophysical and additive manufacturing technologies. The Vancouver hosts were delighted with both the work presented but also the delightful weather for the duration of the conference. The Sage venue was used for the conference banquet with keynote speakers in attendance to present best paper awards. A fantastic time was had by all, and the organizers are proud to pass on the baton to Cardiff for 2027.


ISEM XXII
Vancouver, 2025

In terms of conference statistics, 102 papers were submitted with 82 accepted and presented across oral and poster sessions. The program showcased cutting-edge developments in EDM, ECM, additive-subtractive integration, laser-based machining, in-process monitoring, and sustainability. Each talk followed a 20-minute presentation plus Q&A, ensuring lively scientific exchange. Hosted at the University of British Columbia, the event highlighted global collaboration and featured both early career and senior experts. Accepted contributions now appear in Procedia CIRP. The conference was a clear success, reinforcing CIRP and STC-E's leadership in non-traditional machining and AM.

19th CIRP Conference on Intelligent Computation in Manufacturing Engineering (ICME, Jul 2025, Italy)

The 19th CIRP Conference on Intelligent Computation in Manufacturing Engineering (CIRP ICME '25), 16-18 July 2025, 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 '25.



The response to the 19th 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 '25 Conference has attracted more than 240 delegates with 3 Keynotes in the Plenary Session and 234 papers in the Symposium, Special Sessions and Technical Sessions presented by authors from 26 countries and 4 continents.

The topics ranged from Manufacturing Systems (Production system modelling, design, planning & control; machine tools & special machinery; assembly systems; battery production; robotics & human-robot collaboration; maintenance systems) to Manufacturing Technology (cutting technologies; grinding processes & abrasive manufacturing; nontraditional machining; forming; casting; welding; additive manufacturing; quality assurance; metrology & testing) as well as Emerging Technological issues (digital & smart factory; sustainability in manufacturing; resource & energy efficiency; biological transformation in manufacturing; machine learning & deep learning; virtual & augmented reality; cyber-physical systems; digital twins; cloud manufacturing; human-centered manufacturing; education & human factors).

Furthermore, four 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 Horizon Europe 'BioMeld' Project and Biological Transformation in Manufacturing, chaired by Prof. Igor Balaz, Serbia.
- The Special Session on Fraunhofer International Center for Networked, Adaptive Production – ICNAP, chaired by Mr. Niels König.
- The Special Session on Invitalia 'NEMESI' Project, chaired by Prof. Luigi Nele.

Through a wide range of research topics, the CIRP ICME '25 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 many areas of Advanced Manufacturing Technology and Systems.

Deep appreciation is conveyed to the people and organizations that contributed to the realization and success of CIRP ICME '25:

- Prof. Konstantinos Bouzakis for his Keynote "Investigation on the Implementation of Optical Refinements in the Parthenon Frieze Reliefs Using 3D Laser Scanning and Reverse Engineering Techniques";
- Prof. Luigi Nele and Dr. Davide Santoro for their Keynote "NEMESI R&D&I Project: Current Status and On-going Activities";
- Mr. Niels König for his Keynote "Trends in Digitalization in Production - How to Join Forces with Industry and Academia" and for chairing the Special Session on "Fraunhofer International Center for Networked, Adaptive Production – ICNAP";
- Prof. Nariaki Nishino for organizing and chairing the "IWES Symposium";

- Prof. Igor Balaz for chairing the Special Session on “Horizon Europe BioMeld Project and Biological Transformation in Manufacturing”;
- Prof. Luigi Nele for organizing and chairing the Special Session on “Invitalia NEMESI Project”;
- the members of the Organizing Committee: Prof. Doriana D’Addona, Prof. Alessandra Caggiano, Prof. Alessandro Simeone;
- and finally, all the Session Chairpersons for their efforts and management help.

Particular recognition is due to the Int. Academy for Production Engineering (CIRP), the main scientific sponsor of the CIRP ICME Conference Series; the Univ. of Naples Federico II for its 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**
go to “EVENTS”→ Next CIRP Sponsored Conferences

For the most recent overview of our coming **CIRP School Sessions**
go to “EVENTS”→ CIRP School

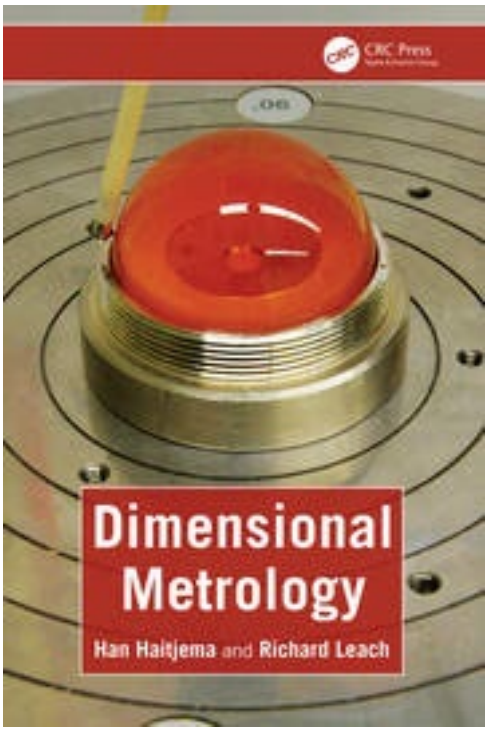
You can find all CIRP Conferences and Sponsored Conferences **past events** through the link EVENTS → CIRP Past Events

New books from our members

Dimensional Metrology

Authors: Han Haitjema, Richard Leach

Description:
This book provides in-depth coverage of metrology principles for students, practicing engineers, technologists, and researchers.



Dimensional Metrology presents and explains mathematical principles and treatments and practical applications of metrology, with numerous chapter exercises that link theory to the solution of practical problems. Computer-based classes of dimensional metrology are covered, such as CMM-technology, areal surface measurement and X-ray computed tomography. Readers are shown how to perform and evaluate dimensional measurements and interpret the results. Measuring instruments and methods are explained so that readers can determine which one to use for specific applications.

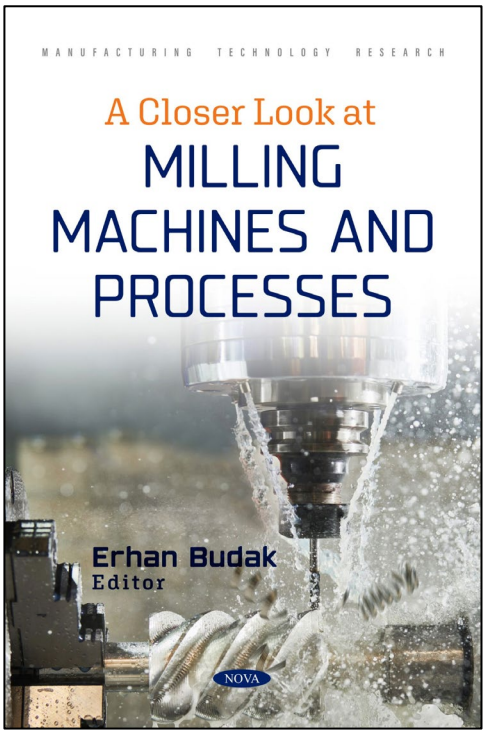
This book aims to give both technicians and academic researchers in the field a thorough understanding of both the mathematical principles and uses and their applications. It can well act as the basis for a course series at the bachelor's and master's level for students in mechanical engineering.

https://www.routledge.com/Dimensional-Metrology/Haitjema-Leach/p/book/9780367420925?srsltid=AfmBOopdF4PgaUiL9nk0jFtmhMiq6NJB0pHN0p8jMkLPsikG2hdeFY7k

A Closer Look at Milling Machines and Processes

Editor: Erhan Budak

Description:



To produce the complex parts needed in many industries ranging from the aerospace and automotive industries to the medical field and to the energy sector, milling is either a key part of the manufacturing process or enables the tools for these industries to exist. Fundamentally, milling involves a cutting tool with multiple teeth that remove material in the form of chips on a milling machine having multiple axes. The milling processes have advanced significantly in terms of productivity and quality over time and naturally certain new issues have arisen. This book presents the current state of the art regarding these key issues while also proposing effective methodologies to optimize each part of this essential process.

The preliminary chapters focus on the fundamental kinematics, mechanics and dynamics of milling operations followed by design optimization and motion control of milling machines. Spindle dynamics strongly affecting the performance of milling machines is the topic of the following chapter. The subsequent chapters focus on the milling of thin-walled parts, cutting tools with special geometries suppressing chatter vibrations and the thermal aspects of milling. Tool life has a direct effect on the productivity and cost of milling operations; thus, the next chapters are devoted to wear analysis and coatings for milling tools. Variations on the machine, tool and work conditions over time affect the performance in a milling operation. These changes can only be detected in real-time during operation using process monitoring which is the focus of the next chapter. In the last chapter, turn-milling offering higher productivity for large diameter parts and reduced tool wear in the machining of difficult-to-cut materials is presented as a growing technology of interest.

https://novapublishers.com/shop/a-closer-look-at-milling-machines-and-processes/

Thinking outside the square…

(by Hon. Professorial Fellow Günter Arndt, CIRP Emeritus Fellow)

Dear Members of the CIRP Community - now for something different:

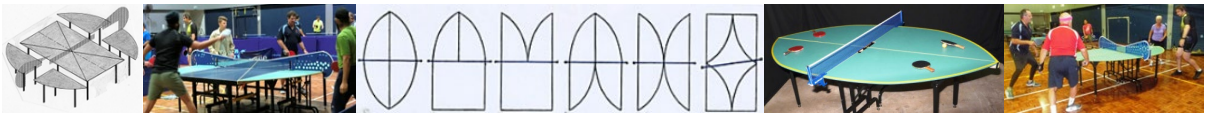
At the upcoming Olympic Games in 2028, the Table Tennis **Team** event will, as usual, feature 3-player teams officially 'playing each other'. But actually, they won't!... Why? Because only Singles and Doubles matches are played, with the **whole team** never playing together as one coherent team of 3. Only then would it be a true TEAM match. But how?

Enter CIRP …

During an STC meeting 'way back' – I think it was in Krakow 2004 – I talked about 'Appropriate Robotics/Automation', showing a round table tennis table with computer-controlled attachments as an example of how to get (young) people interested in accepting to live with such 'progress' (…and I remember some heated discussion with Prof. Peklenik afterwards…). I since retired 'officially', but continued to work on that idea. Eventually, and among other innovations, and not unrelated to the SDWT (self-directing work teams) principle in manufacturing, this resulted in a new table tennis game based on TEAM effort, allowing for the first time in history to play table tennis in teams of 3 players: 'Triples'.

Now, 21 years later, and after a 10-year case study proving the practical applicability of the new game, I have recently put together a research presentation called 'Re-Thinking Table Tennis as a Team Sport', which is openly available at my university's international 'Research Online' platform under:

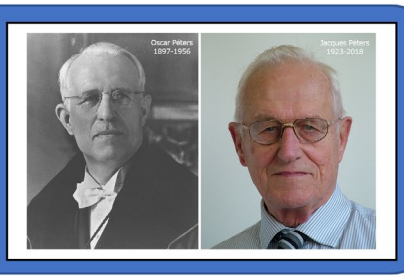
https://doi.org/10.71747/uow-r3gk326m.29466416.v1



Apart from describing the history of this project, the presentation also contains suggestions for manufacturing and further research. Perhaps my CIRP colleagues (and others) may be interested? – I would welcome feedback!

O&J Peters Prize

The O&J Péters Fund



Recipients of the 2025 O&J Peters Prize and the O&J Peters Grant for Development Cooperation

On 10 December 2025, the triennial International O&J Péters Prize was awarded to **Prof. Dr. Ir. Riccardo Levato** during the 12th Belgian Symposium on Tissue Engineering in Kortrijk. Prof. Levato, who is affiliated with Utrecht University, received the prize in recognition of his pioneering research on volumetric 3D printing of soft and biological materials and living cells. This work enables the development of in vitro models that are highly relevant for tissue engineering and regenerative medicine.

The O&J Péters Fund has awarded the 2025 O&J Péters Grant for Development Cooperation to **Prof. Dr. Ir. Haddy Mbuyi Katshiatshia Mukole**, Faculty of Engineering, Université de Kinshasa, for his work on microturbines.

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 is 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 emerging 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 stay at KU Leuven, between 3 and 12 months, of a researcher of an academic engineering school in an emerging 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 an emerging country supported by the Department of Mechanical Engineering of KU Leuven.

Category 3. Starting grant to an early career academic in an emerging country, with PhD degree from KU Leuven, to start off their academic career at an engineering school in their country.

The Grant amounts up to 35'000 euros.

Further details and nomination procedures about these awards can be found at:

https://www.mech.kuleuven.be/o-j-peters-fund

From the CIRP Office

Violaine Baudin

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.

Latest News

- Please refer to the CIRP website and to the 2026 General Assembly website for updates regarding the online publication of the CIRP Annals 2026 (Vols. 1 and 2, accessible to CIRP members) and for announcements regarding the upcoming GA in Torino, respectively.