

DEAR FRIENDS, DEAR COLLEAGUES,

We are only in the year's fourth month, yet there is so much to tell. So far, we have ten conferences organized for 2023. Newly, IMEKO is in collaboration with EURAMET and AFRIMET, besides EUROLAB, and the preparations are on the way to signing a Memorandum of Understanding with GULFMET. In this issue, Mr Paul Regtien, whose name is familiar to most of us, talks about the birth of our online journal Acta IMEKO. The first 2023 issue of Acta is complete and online. AMA Service GmbH tells about the SMSI 2023 conference, which, as a unique feature, is organized in parallel with their leading international SENSOR+TEST trade fair in Nuremberg, Germany. In this issue, Professor Simone Keller Füchter is introduced. Dr Leonardo Iannucci became a member of the Elsevier ECAB, and there is some more ELSEVIER news. The history of TC4, written by Mario Savino, Measurement of Electrical Quantities, continues. Finally, in this edition, we remember Professor Yuri Chugui, a long-time colleague and friend of IMEKO, who recently passed away.

IMEKO AND EURAMET SIGNED A MEMORANDUM OF UNDERSTANDING



(On the picture from left, Professor Frank Härtig, IMEKO President, and Dr Jörn Stenger, Chairperson of the EURAMET)

The European Association of National Metrology Institutes (EURAMET) and the International Measurement Confederation (IMEKO) recently signed a Memorandum of Understanding. The deed aims to foster collaboration between EURAMET and IMEKO and lay a framework for collaborative activities. Activities such as promoting and developing metrology knowledge and infrastructure, particularly in the European region, enhancing the contribution of the European metrology community to key stakeholders, and increasing the awareness of metrology among global metrology stakeholders.

IMEKO AND AFRIMETS SIGNED A MEMORANDUM OF UNDERSTANDING



The Intra Africa Metrology System AFRIMETS and the International Measurement Confederation signed a Memorandum of Understanding recognizing the need to strengthen collaboration and communication between the two organizations.

All activities shall aim to promote the development of metrology infrastructure, particularly in the African region, to enhance the contribution of the African metrology community to key stakeholders and global metrology stakeholders.

The Memorandum of Understanding was signed at the beginning of April 2023 by Dr Henry Rotich, AFRIMETS Chair, and Professor Frank Härtig, the IMEKO President.

ACTA IMEKO, THE BIRTH OF THE ONLINE JOURNAL BY PAUL REGTIEN



The short history of Acta IMEKO

The first issue of the official publication of IMEKO was published in 1958, the year that IMEKO was founded. The title of this issue was "Acta IMEKO 1958 - Proceedings of the International Measurements Conference - Budapest 240-30. XI. 1958" (issued by the Hungarian Sci. Soc. for Measurement & Automation. Text in Hungarian, German, Eng. and Fr.). The issue contains the papers presented at the first IMEKO World Congress, an event that is organized every three years. For many years, the contributions to IMEKO World Congresses were published in Acta IMEKO. Later, the Proceedings of the World Congresses were issued by the organizers as Proceedings, and the name Acta IMEKO disappeared from these printed versions. The printed proceedings were rapidly replaced by proceedings on CDROMs and, recently, on memory sticks. The proceedings of the TC events followed the same development. Selected papers from World Congresses and TC events were published in a newly established IMEKO journal, "Measurement", whose first issue came out in 1983. This journal has evolved gradually into an international journal (published by Elsevier), with scientific articles not only from IMEKO events but from any scientist working in the field of Measurement and Instrumentation.

The limited number of issues per year prevented the publication of the many qualified contributions to IMEKO workshops and congresses. This was a major reason for IMEKO to start a new, obviously electronic-only journal and named Acta IMEKO as a modern successor of the original printed versions. [1].

The birth of Acta, the IMEKO Online Journal, 30 December 2011: I navigated on my laptop, which was connected to a server in Braunschweig, to the button named "publish", and after some hesitation, I pressed Enter. The result was that the first issue of the new journal Acta IMEKO was online. Just in time, we met our self-imposed deadline to launch it before 2012.

During the first decade of the 21st century, IMEKO discussed various ways to strengthen its international role in measurement science. One of the ways to achieve this was to publish its own scientific journal: this could contribute to a greater international reputation for IMEKO. But is there a need for a new journal about measurement? There were already renowned journals in this field, such as the IEEE Transactions on Instrumentation and Measurement, the IOP Journal Measurement Science, the successful Journal Sensors and Actuators and moreover: the Elsevier Journal Measurement, which already published scientific articles from IMEKO members, which grant from this publisher had been awarded. Nevertheless, there seemed to be enough reasons to give shape to this idea.

The Advisory President, Leo Van Biesen, was asked to investigate a possible implementation. After setting the prior conditions, Leo invited me to start with the realization. Why me? Well, I was already quite familiar with IMEKO as a member of three TCs, and as chairperson of TC1.

In addition, I was for many years a member of the Editorial Board of the IOP journal *Measurement Science*, so familiar with journal matters. Moreover, in 1995 I was appointed as a full professor in Measurement and Instrumentation at the University of Twente and figured as a member of the Advisory Council for the Netherlands Metrological Institute.

Nevertheless, I hesitated. I gradually became aware that education and research in metrology at Dutch universities was declining for many years: less and less space was made for this subject in the curricula, and research did not receive the support it deserved, in my opinion. This trend became even more apparent when, in 2010, the faculty dean informed me that, in his opinion, a Laboratory for Measurement and Instrumentation had no future: when once being retired, no successor would be sought, and I would be the last professor in metrology in the Netherlands, an unacceptable prospect. The very next day after the dean's decision, I founded a private company: Measurement Science Consultancy. As a consequence, I changed in further publications my affiliation from University to MSC. In this role, I advised many companies on how to solve particular measurement problems that arise in all kinds of production processes. Either way, it convinced me to accede to Leo's request and helped me keep up with the measurement field going forward.

We started by formulating the objectives. The journal should primarily provide a platform for the publication of research results presented by members at symposia, workshops and IMEKO World Congresses. Further conditions are electronic only, free access for readers (becoming increasingly popular), peer-reviewed to ensure scientific quality, with a high long-term impact factor, and not competitive with the established journals in this field and finally, without too many extra costs for publication.

Free access combined with minimal additional costs for IMEKO? Fortunately, preparations had already been made to arrange some technical aspects, such as the handling and storage of electronic documents. The Physikalisch-Technische Bundesanstalt (PTB) in Braunschweig provided a server free of charge. In addition, IMEKO's webmaster was willing to set up and maintain an electronic platform suitable for the publication of scientific articles. He managed to adopt the free OJS platform for the new journal, and everything needed to interface between all actors in the publishing process. Thank you, Dirk Röske, for taking on this task in addition to your already busy work as a PTB employee!

The next step was to develop an attractive, easy-to-read page layout based on a template that authors can use without much effort, with all the necessary elements for a scientific publication. So a specific set of instructions for authors was needed [2]. A particular challenge was dealing with figures and tables, essential parts of a scientific publication. A difficult choice was that of the text format. Although LaTeX is very suitable for scientific work, especially popular with PhD students, MS Word was chosen because the vast majority of authors are familiar with it. Francisco Alegria played a leading role in all this work, and with success, because now, after more than 10 years, hardly anything has changed in the chosen format. In addition to all this, there were many minor issues that needed to be resolved before the journal could go online. Still, there was a very strict deadline: the first issues should be available online in 2012.

After the technical preparations were completed and the production team was satisfied with the result, it was time to start. Dirk suggested starting with a so-called administrative number, Volume 0, just to inform the members of IMEKO about the new journal and to make them aware of the possibility of publishing their papers from 2012 onwards. However, a crucial part has not yet been addressed: how do you find people to perform the various tasks associated with the expected paper flow:

copy editors, layout editors, and reviewers?

To get enough high-quality submissions, the chairmen (sorry: chairpersons) of the various sessions were asked to select the best papers presented at the TC workshops, symposia and the World Congresses and to invite these authors to write an extended version of their conference papers for rapid publication in Acta IMEKO. To be honest, my first idea when I started the journal was that papers submitted to an electronic journal could be published within one or two months at the most after a conference or other event. It soon turned out to be wishful thinking: guaranteeing a high scientific level of the submissions, collecting enough contributions for one issue, and creating an attractive page layout (also suitable for printing) apparently took much more time.

The review process, in particular (essential for a high scientific level), is time-consuming. After all, the various steps in the publication process follow each other in time: the writing of the extended version by the selected author, the review (a minimum of two independent reviewers are required), the resubmission of the revised version and possibly a second round of reviews, the final editing (absolutely necessary for a reasonable English text), checking all reference and figure numbers, the last page layout and the compilation of the articles and journal details of a complete issue.

As a result, the first issue in 2012 appeared online in July. It contained a welcome message from IMEKO's President, Professor Dae-Im Kang, and a welcome article from President-Elect, Professor Pasquale Daponte. This was followed by an introductory article by the first guest editor, Pedro Ramos, with 11 selected papers from the 18th IMEKO TC4 Symposium in September 2011 in Natal, Brazil. He stipulated the enormous contribution of the authors. 27 reviewers were involved in the review process and helped shape the

manuscripts. Naturally, during this process, a number of shortcomings in the system were discovered, which led to improvements in procedures.

In the years that followed, we received a more or less constant stream of submissions from the various TCs, enough to complete four volumes a year. It was a real challenge for the copy editor, layout editor and webmaster, in particular, to meet the deadlines. I remember well the time when Dirk, Francisco and I worked hard between Christmas and New Year to get everything ready for the last issue of the current year several times; it was really in the last few hours I finally got the message from Dirk: you can now press the publish button.

Changes in the production team were inevitable in recent years: the layout editor of the first hours had to stop, but fortunately, was soon succeeded by Rosario Morello. Paolo Carbone was a great help and very successful in persuading colleagues or PhD students to contribute to the journal, as evidenced by the relatively large number of Italian members on the Editorial Board. In Vol. 11, I count 52 Editorial Board members, two copy editors, three layout editors, and an impressive list of reviewers.

After more than 10 years, I felt it was time to take a step back. I have discontinued my MSC company (so don't try to contact me at that address or email address). A few years ago, I decided to devote my free time to other activities and also announced my departure from the editorial office of Acta IMEKO.

Nevertheless, I keep many good memories of the years I was involved with IMEKO, the many meetings I was allowed to attend, and the pleasant contacts of IMEKO members all over the world, from Japan to Brazil, from Finland to South Africa. The trophies on my piano keep this memory alive, like the conference bag I still carry my sports suit in on my way to my weekly volleyball match.



(From left: IMEKO Brazil 2006, IMEKO Cavtat 2003, IMEKO TC7 Brussels 1996)

Dear IMEKO colleagues, thanks to all, including those I have not mentioned explicitly in this short retrospective of the most exciting and challenging period of my professional life. I wish Acta IMEKO a long-lasting lifetime.

[1] The revival of Acta IMEKO, vol. 0, no. 1 (Dec. 2011), p.1.

[2] Instructions for Authors, vol. 0, no. 1 (Dec. 2011), pp. 2 - 3.

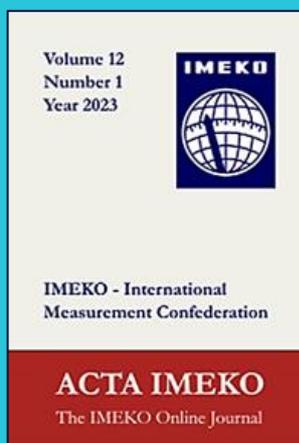
Written by Paul Regtien

Mr Paul Regtien (1946) has been acting since 2008 as President of the Ampère Foundation (named after André-Marie Ampère (1775 -1836), a French scientist) at the University of Twente - Netherlands. The foundation was established in 2007 to professionalize the management of the Historical Collection and represent it to the outside world.

The Historical Collection has existed for 44 years and is maintained by a working group of volunteers, currently counting about 15 active members, all former employees of the University (retired). Five of them form the Board of the Ampère Foundation. They aim to improve the historical consciousness and knowledge of developments in electrical engineering and information technology in the past. The emphasis lies on the fields educated and investigated in the Electrical Engineering, Mathematics and Computer Science departments. The developments are explained based on examples of research in the department.

For more information, please visit: <https://studieverzameling.utwente.nl/>

THE FIRST 2023 ISSUE OF ACTA IMEKO IS ONLINE



The first 2023 issue of Acta IMEKO is completed.

This issue has one special track dedicated to extended versions of papers submitted to the first IMEKO TC6 conference (after its re-animation)

with a new subject and title, digitalization. The conference took place in Berlin, Germany, on 19-21 September 2021. Fifteen extended papers were submitted

and accepted by the journal, all dealing with aspects of digitalization, including sensor networks, digital twins and digital calibration certificates, blockchain, software, in the wider sense, databases, and automation.

(Section editors: Jon Bartholomew, Daniel Hutzschenreuter, Siniša Prugovečki, Cristian Zet.)

The general track contains 6 papers covering fields like power quality measurement, battery lifetime, diagnosis of defects, oil level sensor for aeronautical applications, data acquisition and Terahertz techniques for better hazelnut quality!

(Section editor: Francesco Lamonaca)

All articles are open access; feel free to read at Acta IMEKO on the [journal's website](#)

SMSI 2023 WITH SENSOR + TEST TRADE FAIR BY AMA SERVICE GMBH



The first major SMSI 2023 - Sensor and Measurement Science International Conference - in face-to-face format is approaching. It will be held in Nuremberg from 8-11 May 2023.

After the successful launch of the virtual conference version of SMSI 2021 digital, numerous well-regarded experts and young scientists from 14 countries will come together this year in attendance to present their latest research results and to exchange ideas and future trends with other participating experts on topics in the fields of sensors, measurement science and metrology.

The SMSI 2023 Conference Program combines excellent sessions, exciting lectures, tutorials, a Science Slam, the Job Lounge and the Conference Dinner to provide a top-class scientific event.

The unique feature of this conference is that it takes place in parallel with the leading international SENSOR+TEST trade fair, thus bringing academia, industry, and non-academic research organizations together in one place. The developer and host of these two event formats is the AMA Association for Sensors and Measurement in Berlin, Germany, founded on 7 November 1980 during the Electronica trade fair in Munich, Germany, to promote dialog among all groups involved in sensor technology.

Since then, the association has grown with 450 members into Europe's leading network in the key sector for sensor and measurement technology.

The first sensor trade fair with a parallel conference was held in Essen, Germany, from 12-14 January 1982 and finally evolved into the annual SENSOR+TEST trade fair in 2005. In 1986 the AMA Service GmbH was founded to organize and run trade fairs and the accompanying conferences.



In the past era of AMA conferences, the idea of establishing a full-fledged international sensor and measurement conference emerged in 2015. Due to the economic necessity for the highly efficient sensor industry in Germany, the topic pillar "System of Units and Metrological Infrastructure" was developed with the support of renowned metrology institutes. With the upcoming SMSI Conferences, this topic pillar will be established as a permanent part of the AMA Association in addition to sensors and measurement science.

The SMSI Conference Committee comprises over 70 internationally active professors and experts responsible for selecting the topics and reviewing the scientific submissions from authors. With their active support, the AMA Association can ensure that the conferences always receive the necessary applications for scientific lectures and poster presentations to create an attractive conference program.

Therefore, the SMSI chairmen would be obliged to welcome new interested experts to the SMSI Conference Committee.



In addition to the publication of submitted short papers in the conference proceedings, the AMA Association has also set up the possibility of having extended manuscripts published in the

Journal of Sensors and Sensor Systems (JSSS) after each conference.

The highlight topics at the SMSI 2023 Conference are:

- quantum sensing,
- quantum metrology,
- optical biosensors,
- smart measurement and sensor systems,
- metrology in the digital age,
- nanometrology and nanofabrication, and
- Kibble and Planck scales.

The following leading experts have been confirmed as plenary speakers for this year's conference:

Dariusz Krakowski,
Airbus, Hamburg (Germany)
"Sensors in the Aircraft: Seeing the World Through the Eyes of Environmental Control System "

Frank Härtig,
Physikalisch-Technische Bundesanstalt, Braunschweig (Germany)
"Digital Future of Metrology "

Bernd Valeske,
Fraunhofer-Institut für Zerstörungsfreie Prüfverfahren, Saarbrücken (Germany)
"Sensor and Data Systems for Circular Materials - R&D Demands and Requirements for Interface Specifications and for Validated Applications"

Emma Wooliams,
National Physical Laboratory, Teddington (United Kingdom)
"Metrology for Climate Observation: European Coordination"

Heinrich Heiss,
Infineon Technologies AG, Neubiberg (Germany)
"MEMS audio activities"

Wolfgang Koch,
Fraunhofer Institute for Communication, Information Processing and Ergonomics, Wachtberg (Germany)
"Perspectives on AI-driven systems for multiple sensor data fusion"

Georg E. Fantner,
Ecole Polytechnique Fédérale de Lausanne, Lausanne (Switzerland)
"Nanoscale AFM Measurement Technology"

The full SMSI 2023 Conference Program can be seen at:

<https://www.smsi-conference.com/>

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INTRODUCING PROFESSOR SIMONE KELLER FÜCHTER



Professor Simone Keller Fuchter, from now on, Simone, on her encouragement, is the Scientific Secretary of IMEKO TC17 dedicated to Measurement in Robotics and Chair of the Subcommittee Augmented Reality. She is an IT consultant,

Professor and Researcher at Estácio de Santa Catarina University in Brazil. She chaired the recently organized ISMCR2022 event of IMEKO TC17, which focused on "Robotics and Virtual Tools for a New Era.". It was organized by Estácio de Santa Catarina University and the IEEE Galveston Bay Section Houston, Texas, United States. The event featured participation from various countries, including Japan, Belgium, Hungary, the United States, Italy, Chile, Canada, India, and Brazil. Previously, she coordinated with Professor Masahiko Inami and Professor Susumu Tachi the IMEKO TC17 topic event called "Virtual Media Technologies for the Post COVID-19 era" hosted by the University of Tokyo.

As the Director of Electronic Government for the State of Santa Catarina, Brazil, Simone has worked on leading implementations of electronic processes, e-government, and administrative modernization in various areas related to information technology. In addition to her career in IT, she is active in the academic environment as a professor, researcher, and supervisor. After the University of Santa Catarina (UDESC), and the University of Southern Santa Catarina (UNISUL), she works as a professor and researcher at Estácio de Santa Catarina University. This involves teaching courses in Management and Technology, including Digital Games, Artificial Intelligence, Educational Technologies, Virtual and Augmented Reality, Gamification, Information Innovation, and Metaverse.

She was considered one of the leading experts in Augmented Reality in the world, in the launching of AR Cora Plattform, by Creative Drive in New York. She won the "Virtual Classroom App" together with Dr Alexandra Okada and Sangar Zuchi and the "The Best VirtualApp" award from the Open Education Consortium in England.

Since 1996, Simone has been working in the field of e-commerce, giving speeches and writing articles published in Brazil, the United States, Chile, Italy, England, China, and Spain. This includes Universities like Cambridge, Houston Clear Lake, and the Johnson Space Center/ NASA in Houston. She works as an IT consultant, covering areas such as IT management, including strategic planning for IT, for various companies. She also implemented electronic purchasing when the Internet was still a novelty and taboo for industry and commerce. She is considered a visionary in the IT area.

Have you always envisioned and enjoyed challenges in your career? Such as the master's degree in e-commerce in 1996? You must have faced many barriers and a lack of credibility, as it was a relatively new technology back then. Perhaps also with Augmented Reality in 2012, when you started presenting scientific works in various countries? Are you a visionary?

Interestingly, people often say I'm a visionary because I worked with and studied technologies that were not well-regarded at the time. In 1996, I lectured groups of different companies; and the very idea of the Internet as a financial base for businesses these companies considered very dangerous and doubted it would ever go far. But that's precisely what happened. Soon after, it was the same with cloud computing. In 2000, I talked a lot about this concept, but few people had confidence in cloud computing. I used Salesforce as an example, which, in 2000, already had an incredible platform.

Today, cloud computing is widely and naturally used. The same happened with Virtual and Augmented Reality. I researched, presented, and developed these technologies. At first, it was difficult for people to understand what Augmented Reality was. People began to understand it better only after the release of "Pokemon Go". It was funny, but from then on, the public seemed to grasp the concept of visualizing virtual elements in the real environment, as if interacting with the surroundings. Today, Augmented Reality is widely used in industries, training, education, marketing, architecture, civil engineering, medicine, and many other fields. I am particularly interested in its applications in the industry, where I was responsible for creating the first Augmented Reality engine for the company WEG Motors. It was an incredible experience for me to be involved in Industry 4.0. Marketing and education are other fields applications that I am researching. Nowadays, I am focusing on AR and VR for aviation, flight training, and many other applications.

Could you tell us a bit about your presentations at NASA?

Yes, in 2017, I presented "Augmented Reality as a Tool for Technical Training" to NASA engineers at the Gilruth Center within the Johnson Space Center, Houston, USA. This was organized by IEEE/ Galveston Bay Section. The following year, I returned, this time at the invitation of the XR Community of Practice Johnson Space Center, Houston, which discusses Virtual, Augmented and Mixed Reality. This year's topic was "Augmented Reality in Aviation for Pilots and Technicians". Other presentations also took place at the University of Houston Clear Lake. "Pre-flight Inspection and Briefing for Training Aircraft Pilots using Augmented Reality". During this period, I participated in many other activities (universities, industries, and events) where Augmented Reality was widely discussed in the aerospace industry. I realized that having a pilot's license gave me more credibility in my research in this area.

How did you become a pilot? What was your most memorable flight experience?



When I was a child, my dad used to bring me to Aeroclub, and we played a lot with aeroplane toys. We used to assemble little ones and put them to fly, or at least we tried. He was not a professional pilot, but my mum used to say he used it to impress her by flying above her school when they were still dating.

After a long time of not being in touch with aeroplanes, when I was 17, I travelled in a Boeing 767 for the first time. (I was already a computer programmer then). It was so impressive how that giant machine could take off like a bird in such a delicate and charming way. At that moment, my idea about engineers changed. Those are artists, I thought, who build something so beautiful, harmonic, and perfect, with every piece running like a Symphonic Orchestra.

As I worked in a different area, it took time before I had my Private Pilot Certification at the Aeroclub of Santa Catarina. I don't fly too much, it is just a hobby, but it is always an incredible experience.

My favourite memory?

No doubt, it is my first solo flight. It was an exercise of mental control, concentration, focus, and simultaneously different feelings like anxiety, insecurity, happiness, and excitement when my instructor said: "now it is just you, go ahead!" In a few flashes, I remembered that I had been trained to fly, that I knew all emergency procedures and that my instructor Moretti trusted me. In those moments, I had to analyze not just my feelings but the reasoning part too, and in two long seconds, I concluded that I was ready to fly. It was the most perfect flight I have ever made and the softest, smoothest, and most pleasant landing in a silent and

beautiful moment close to the sunset. I always go back to this memory when I am in a difficult situation and have to make a wise decision confidently and move.

How did this mix of Virtual Reality and Aviation happen?

This mix of Augmented/Virtual Reality and Aviation came about when I renewed my private pilot license (PP). I noticed some difficulties that people training in an aircraft were facing. I could clearly see how Augmented Reality could contribute, so I worked on a software prototype with Mario Sergio Schlichting. Several people tested it, including private pilots, commercial pilots, fighter pilots, instructors, and students. The results were fascinating. Some applications I presented for pilot training were flight panel checklists, pre-flight external inspection, and radio communication in the airfield circuit. Based on this experience, we published an article on "Augmented Reality life-size flight panel for checklist training" with the NASA engineer George Salazar, responsible for the human-computer interface at the Johnson Space Center in Houston, an expert in spacecraft panels. It was amazing to research the fundamentals of these interfaces between pilots and flight panels with him. I am immensely grateful for his participation in this scientific article involving Human-Centered Design (HCD). He introduced me to this methodology, which is fantastic for aviation. I first met Mr Salazar at Houston's IMEKO TC17 ISMCR 2019 event. He presented "Spacecraft Panels from Apollo 11 to today", comparing their evolution. I was very impressed. We also introduced another study with him and Karen Alexander (XRconnectED), another prototype developed with Sangar Zuchi, entitled "Combining immersion and interaction in XR training with 360-degree video and 3D virtual objects."

Besides all this, you mentioned dedicating some time to volunteering? How do you ever find the time for it?

Well, I am focusing my energy on inspiring and mentoring students, encouraging them for the STEAM areas, which are science,

Technology, Engineering, Arts, and Math.

Could you mention some activities in particular?

Mentoring for the International Aero and Space Program (IASP) STEM Girls, a week-long educational program organized by AEXA Aerospace at NASA's Kennedy Space Center in Cape Canaveral, Florida, USA. I worked with selected students from various countries who received scholarships for a program with astronaut training activities.



Counselling at KSC International Space Academy, Space Camp Journey to Mars, and also Science Days (Organized by Michaelis Foundation) Judge at Florida NASA Space Apps.

Volunteering with the KSC International Academy at the Space Camp in Rio de Janeiro, Brazil: I presented a workshop on Augmented Reality using the Foundation Buzz Aldrin's (the second man to step on the moon) map. This huge map represents Mars with the respective positions of the Rovers and Probes already sent to Mars. The Workshop showed students the Rovers and Probes in an Augmented Reality app developed by NASA's Jet Propulsion Laboratory (JPL) in California, USA.

I am also active as Scientific Secretary in TC17.

When and how did you find out about IMEKO?

Dr Zafar Taqvi introduced me to the IMEKO community in 2019. He is a fantastic person who encouraged me in my research and inspired me all these years with his dedication to research and knowledge dissemination. He is the IMEKO TC17 Chair and has been doing a terrific job with many activities on the Committee. He is a great leader, and we learn a lot from him.

What is the greatest challenge for you professionally?

I think it is the speed at which technologies, including Artificial Intelligence, are changing. You are going to sleep, and probably tomorrow, many new digital tools are emerging and impacting projects in which you are involved. The good part is that I am always open to learning and don't mind if those teaching me are very young people, even children, or incredible professionals.

We must be humble and accept that we will always have to learn. As in the Brazilian song by singer Gonzaguinha: "Singing, singing and singing the beauty of being an eternal apprentice".



Written by Professor Simone Keller Fächter

SPRING MEETING VIENNA



On the picture from left to right: Kristine, Zoltan Zelenka, Professor Kenneth Grattan, Professor Masatoshi Ishikawa (online participant), Professor Frank Härtig, and Professor Paolo Carbone.

Over the weekend, 21-22 April, the Presidential Board held its annual "Spring Meeting 2023" meeting in Vienna.

Here are the highlights:

IMEKO is part of the joint effort on [digitalization](#). In June, a Technical Board meeting will be organized on the IMEKO-wide collaboration and participation.

The IMEKO Strategy for the next years was another important meeting topic. The results will be presented at the next General Council Sessions on 8-9 September in Budapest, Hungary, 2023. On the same occasion, IMEKO will celebrate its 65th anniversary.

Preparations continue for the **24th IMEKO World Congress 2024 in Hamburg, Germany**; new details are available on the conference website.

THE HISTORY OF TC4, MEASUREMENT OF ELECTRICAL QUANTITIES, THIRD PART

(The continuation of the newsletter article February 2023 by Mario Savino.)

10. The problem of EMC testing and the wireless communication field



(On the picture from left to right: Ian A. Henderson, Mario Savino, Joseph McGhee)

The 9th Symposium on "Electrical Instruments in Industry" was organized in Glasgow, Scotland, September 8-9, 1997, by Ian A. Henderson and Joseph McGhee. Adam Fiok had the license received by the General Council to organize a Symposium in the same year as the World Congress, but given his health problems, he could not take part in the event. Even though it was held in the same year as the World Congress, the Symposium had good success, with a total of sixty-three papers presented and at the end, I concluded that Lord Kelvin would be happy with the results obtained during our work because the growth of automation in electrical instruments which are used in industry was deeply investigated during the Symposium.

The TC4 meeting was devoted to discussing the problem of the Working Group on "Measurements for EM".

In perspective, the establishment of a TC4 Subcommittee with the same title was considered. Also, the resolution assumed by TC4 during the meeting in Brussels was recalled when the proposal was withdrawn because the subject had already been dealt with in several specific conferences and reviews. However, the reconsideration was justified by the increasing interest in EMC measurements, also connected with requirement and testing for quality. The social program included a Banquet at the Strathclyde Business School and a technical visit to the Torness nuclear power station.

The 10th Symposium, "Development in Digital Measuring Instrumentation", was held in Naples, Italy, September 17-18, 1998. Symposium was that with the highest number of participants.



(On the picture from left to the right: Antonio Serra, Mario Savino, Sergiej Taranow, Jean Weiler, Wladimir Kneller)

The success was due to the active collaboration of my friends Massimo D'Apuzzo and Antonio Langella. Adam Fiok was absent, and I, as Acting Chairman, replaced him in all commitments, opening and closing the Symposium.

The Working Group on ADC and DAC Metrology organized the third Workshop allowing involved partners to meet each other and develop common research projects.

The Workshop highlighted that the problem of ADC and DAC characterization was of interest. But not only to manufacturers mainly to system integrators as well as end users. Researchers and technicians needed a definition of a specific standard concerning the modelling and testing of ADC and DAC-based measuring devices. According to the European political integration, the IMEKO TC4 Working Group proposed a European Project for ADC-based device Standardization (EUPAS). The coordinators of this project were Harald Schumny and Pasquale Arpaia.

During the TC4 meeting, my official capacity passed from Acting Chairman to TC4 Chairman. As we decided during the meeting in Tampere, Milos Sedlacek and Antonio Serra were elected TC4 Deputy Chairman and Scientific Secretary of TC4, respectively. I confirmed that all the terms of office had to be limited to three years. Adam Fiok was appointed Honorary Chairman. I asked Ludwik Finkelstein to replace me with Pasquale Daponte in the Editorial Board of Measurement so that I could concentrate on my activity on the Chairmanship. As the first point of my Chairmanship, I asked to discuss the problem of extending the finality of TC4 to the wireless communication field, also considering that the previous preclusion with respect to high frequency did not longer exist. As the second point, I tried to increase the cooperation between IMEKO and IEEE that was activated with my presence in charge of program co-chair of the IEEE Annual Conference on Instrumentation and Measurements, which was held in May of the same year in Venice and had the sponsorship of TC4. I also asked my friend Alessandro Ferrero to promote a meeting among persons in charge of the IMEKO and IEEE. Alessandro told me that, unfortunately, the meeting had not been successful.

11. The importance of Standards

Even though I asked my friend Luigino Benetazzo for help in organizing a Round Table on "Measurements for EMC" during the World Congress in Osaka, Japan (June 13-18, 1999), it was impossible. As there were too few people interested, I decided to delete the event.



During the TC4 meeting, we commemorated the death of Jean Weiler.

He was the Swiss delegate to the IMEKO General Council from 1972 to 1996 and its Treasurer for twenty years. He was the "father" of TC4,

besides being an excellent scientist with an elegant and culturally vital life. In particular, he was interested in measurements on power lines in non-sinusoidal conditions and was often severe regarding many papers which did not bring any valuable contribution to that research. During the TC4 meeting, we continued to discuss future activities in the field of wireless communication and, in general, in the field of telecommunications.

The 4th Workshop on "ADC Modelling and Testing" was held in Bordeaux, France, September 9-10, 1999. The Workshop was organized by Philippe Marchegay and Dominique Dallet. It was the second IMEKO event in France after the 5th IMEKO World Congress held in Versailles in 1970. The Workshop highlighted that the structural and functional complexity has represented some of the most important concerns to face in ADC and DAC metrology. The knowledge of ADC's metrological characteristics is basic information to improve the quality and reliability of the overall measuring system.

Many algorithms and testing methodologies were presented to outline and monitor the ADC behaviour, validate the proposed models or sub-models, evaluate the relatively different errors, and consider a possible correction through software.

The 5th Workshop on "ADC Modelling and Testing" was held during the 16th World Congress in Vienna, Austria, September 26-28, 2000. I was invited by Linus Michaeli to present a keynote. We came back to Vienna after eight years and commemorated the death of Adam Fiok.



I recalled Adam Fiok's personality from the human and scientific point of view; I described, in particular, Adam Fiok's commitments to creating and improving TC4. For many years he had been a member of the General Council and of the "Measurement" editorial board. He had been the initiator, founder, and Chairman for many years (1989-98) and Honorary Chairman (since 1998) of TC4. Finally, I said that the best way to honour his memory was to continue his work to reinforce TC4 activities. During the Congress, the EUPAS meeting was presented by Harald Schumny, its Main-Coordinator to the auditorium as a worldwide spread interest group for supporting standardization efforts in the field of digital measurement to develop joint or common projects and applying for financial support.

Not only was the activity documented by lots of scientific publications and presentations at conferences and workshops, but it also resulted in official cooperation agreements with IEEE TC10 and IEE. Thomas Linnenbrink, Chairman of the IEEE TC10 ADC subcommittee, explained the status of the IEEE Standards and made a call for active participation. The work and results achieved by Vladimir Haasz (in former cooperation with PTB Berlin) led to asking TC10 to henceforth include definitions for the electromagnetic compatibility of components and plug-in boards in upcoming standards.

12. The advancement of measurement science for the peace

The 11th Symposium on "Trends in Electrical Measurements and Instrumentation" was held in Lisbon, Portugal, September 13-14, 2001. I asked to insert into the topics of the Symposium "HF measurement and electromagnetic compatibility (EMC) from the point of view of measurement" to enlarge the frequency spectrum and verify the possibility of organizing a Working Group on EMC. All members overcame their fear after the 9/11 bombing and participated in the Symposium, which was a success.

During the welcome address, I asked myself what we could have done. All the international associations of scientists work for peace in the world, which is the best response to all kinds of violence. Through our work, we seek to advance measurement science, and this will allow our conscience to grow and will allow us to pass it on to other people. We must continue to work with a passion for improving scientific knowledge without hate and anger. In this way, we will contribute to spreading science in the world to enlarge not only the market but also peace.

(To be continued by Mario Savino)

THE 100TH ANNIVERSARY OF METROLOGY IN KAZAKHSTAN

The Kazakhstan Institute of Standardization and Metrology (KazStandard) organizes an International Scientific Conference dedicated to the 100th anniversary of Metrology in Kazakhstan. It will be held on 25 May 2023 in Astana (Kazakhstan).

The event's main theme is "Measurements as the basis of global trust".

The IMEKO President was honoured to receive an invitation to this event.

Congratulations to KazStandard on the 100th anniversary of Metrology in Kazakhstan!

DR LEONARDO IANNUCCI BECAME A MEMBER OF THE ELSEVIER ECAB



Congratulations to Leonardo Iannucci, who was recently appointed as a new member of the second Early Career Advisory

Board (ECAB) of the Journals Measurement and Measurement: Sensor. This initiative was born to recognize outstanding early career researchers and engage them in a path towards editorial work.

The responsibilities of the ECAB members include :

- Actively conduct reviews for papers in the two journals at the request of their Editors
- Submit at least two manuscripts to either/ both journals within the term
- Be an ambassador for Measurement and Measurement: Sensors and promote the journals via social media, conferences, and other channels
- Provide consultation to Measurement and Measurement: Sensors editors at their request
- Assist with special issue proposals and paper reviews under the guidance and discretion of the two journals' editors.

Dr Leonardo Iannucci, the very active Scientific Secretary of the Technical Committee 24 dedicated to Chemical Measurements, about his new position:

"I am very happy to be involved on the Editorial Board of important journals in the field of measurements and instrumentation.

It is a fantastic opportunity to learn about Elsevier's editorial processes and stay updated about the latest studies in this scientific field (by reviewing submitted papers). Specifically, I will contribute to the topics of Chemical and electrochemical measurements, which, looking at the other ECAB's CVs, is a less frequent area of expertise."



This follows the success of the 2021 ECAB. Early career researchers are defined as those who have completed their doctoral degree and are within five years of their first independent research career in a tenure-track or equivalent position.

ELSEVIER ON PROFESSOR AIME LAY-EKUAKILLE AND SPECIAL ISSUES



We are delighted to welcome TC19 Chair Professor Aimé Lay-Ekuakille as the new Special Issues Editor of Measurement:

Sensors! Aimé has actively contributed to measurement on the senior editorial team for many years, where he also holds the role of Special Issues Editor. Since its launch in 2021, he has additionally been one of two Senior Editors of Measurement: Food. Aimé's engagement with, and support for, the three Measurement family titles is hugely valued by editors and publisher alike, and he has made vital contributions to their success. Now we look forward to the results of his actions around special issues for Measurement: Sensors, the first open access 'sister' journal, launched in 2019.

In this title, new proposals for special issue topics are warmly welcomed for their relevant, timely and novel addition to the journal's regular content.

Through reaching out to new communities, special issues help to expand the scope of this young journal, broaden its reach amongst researchers worldwide, and boost its visibility within the competitive publications landscape.

If you are interested in suggesting a special issue for Measurement: Sensors yourself (or wish to spread the word to colleagues), instructions for doing so are provided here: [Journal/Measurement-Sensors](#).

(Scroll down for "Guidelines for submitting proposals for journal Special Issues"!)

Written by Kay Tancock, Senior Publisher at Elsevier

CONFERENCES

IMEKO TC15 EXPERIMENTAL MECHANICS

Announcing the 18th Youth Symposium on Experimental Solid Mechanics (ISESM-2023) on 11-14 June in Telc, Czech Republic. The ISESM symposium provides a forum for young researchers, engineers, PhD students, and students dealing with experimental mechanics. It concentrates on current work in all experimental research areas and its application in solid and fluid mechanics. Topics such as Conventional and Advanced Experimental Methods in

Solid and Fluid Mechanics, Non-Destructive Testing and Inspection, Measurements in Material Science, Computer Assisted Testing and Simulation, Engineering Design Simulation, Hybrid Methods, Experimental Techniques - Numerical Simulation, Optical Methods and Image Processing, Measurements in Biomechanics, Sensor Techniques for Micro and Nano Applications, Measurement Methods for Forensic Engineering.

IMEKO TC16 CONFERENCE ON PRESSURE AND VACUUM METROLOGY

Announcing the IMEKO TC16 7th Conference on Pressure and Vacuum Measurement (together with the CCM,

the Consultative Committee for Mass and Related Quantities of the BIPM), Washington DC, United States, 15 - 19 May 2023, [Website](#)

TC10 MEASUREMENT FOR DIAGNOSTICS, OPTIMIZATION AND CONTROL

The IMEKO TC10 kindly invites you to attend the "MACRO Meets NANO in Measurement for Diagnostics, Optimization and Control" conference in Delft, The Netherlands, on September 21-22, 2023.

conferences.imeko.org/event/7

The conference is a forum for advancing knowledge and exchanging ideas on methods, principles, instruments, technologies and IT tools, standards, industrial applications, conformity assessment, quality management and measurement challenges on Diagnostics, Optimization and Control, and their diffusion across the scientific community. Participants have an excellent opportunity to meet top specialists from industry and academia worldwide and to enhance their international cooperation.

The programme will feature scientists and experts as leading keynote speakers for selected presentations on the conference's main topics.

Important Deadlines:

- 30 April 2023, Deadline for submission of the extended abstract
- 30 May 2023, Notification of authors of paper acceptance
- 30 June 2023, Early registration deadline
- 30 June 2023, Deadline for camera-ready papers

TC4 MEASUREMENT OF ELECTRICAL QUANTITIES

Dear Colleagues,

We are thrilled to report that the news about the IMEKO TC4 conference has spread, conferences.imeko.org/event/3/ and the feedback of interest has been very high. Several professors and industry experts kindly requested that we extend the deadline for submitting the abstract to **30 April**. We are happy to announce that we have granted this request!

We want to take this opportunity to thank all those who have already submitted their extended abstracts.

Thanks to your contributions, we have received many high-quality papers. We are confident that the conference will be a great success.

We are working diligently to organize the review process. Rest assured that you will receive a prompt response from us, allowing you to efficiently organize your upcoming trip.

Thank you for your hard work!

Sincerely,

Your TC4 Organization Committee

IMEKO JOINT CONFERENCE TC8, TC11 AND TC24 ON MADEIRA PORTUGAL



Dear Colleagues,

Welcome to the Joint Conference of IMEKO of TC8 Traceability in Metrology, TC11 Measurement in Testing Inspection and Certification, and TC24, dedicated to Chemical Measurements, from 11 to 13 October 2023 on Funchal, the magnificent Island of Madeira, Portugal.



Following the recent success of the Joint Conference in Cavtat-Dubrovnik, Croatia, in 2022, RELACRE, the Portuguese Association of Accredited Laboratories, is organizing this event together with these TCs and stakeholders. The conference will bring together the TIC community, academia and industry, promoting the latest advancements in science and technology in many measurement fields.

Why Madeira Island?

Madeira Island is a Portuguese jewel discovered in the XV Century in the Atlantic Ocean, known for its nice tropical weather, a place full of authenticity where art, culture and nature provide incredible experiences and lasting memories. Visitors may enjoy the exotic colours of the flowers, the blue sea and the emerald-green vegetation. This is an archipelago where two-thirds is a protected area and where the largest Laurisilva forest in the world is located. Funchal, the capital city, is famous for its hospitality, gastronomical heritage and vibrant environment.



Save the date 11-13 October 2023, Funchal Madeira Island, Portugal, for the joint TC8 Traceability in Metrology, TC11 Measurement in Testing, Inspection and Certification, and TC24 Chemical Measurements Conference.

CALL FOR PAPERS

Authors are kindly invited to submit abstracts of 250 words in English in the appointed Joint Conference mottos.

- New challenges and opportunities in traceability
- Testing, Inspection and Certification for Confidence and Safety
- New Perspectives in Chemical Measurements

After acceptance, Authors will be informed and kindly invited to submit full papers (up to 4 pages) in English.

Accepted and presented full papers will be submitted for inclusion in Scopus after the event.

IMPORTANT DATES:

Abstract submission until 1 May 2023

Confirmation to Authors 15 May 2023

Full paper: 20 June 2023

For more information, visit:

conferences.imeko.org/event/5/

Or contact:

info_ijconf_madeira2023@relacre.pt

THE VENUE:

Hotel Vidamar Congress Center
[\(https://madeira.vidamarresorts.com/\)](https://madeira.vidamarresorts.com/)
 Estrada Monumental 175-177
 9000-100 Funchal, Madeira Island Portugal

ASIA PACIFIC MEASUREMENT FORUM ON MECHANICAL QUANTITIES (APMF2023)



The Asia Pacific Measurement Forum on Mechanical Quantities (APMF2023) is pleased to announce that the forum is to be held from 20th to 24th November in Chengdu, PR China.

It will be the 15th forum since its initiation in 1992, open for colleagues of metrology institutes, calibration/testing laboratories, industries and universities to exchange the latest updates in R&D on the measurement of mechanical quantities, with subjects including but not limited to mass, force, torque, volume, density, hardness, pressure, vacuum and gravimetry specifically in:

- Fundamental research
- Technical updates for mechanical measurement addressing the new SI
- Updates in standards, dissemination methods and so forth
- Innovative measurement methods/proof of concepts/facilities
- Measurement for ultra-small/large mechanical quantities

- Applied research and knowledge dissemination
- Dissemination methods addressing challenges in pandemic/post-pandemic time, etc
- Digitalization of laboratory processes
- Testing/calibrating procedures and facilities
- Dynamic Measurement
- On-site calibration/testing.

APMF2023 will be co-organized by the National Institute of Metrology, China (NIM) and the Chinese Society for Measurement (CSM) and co-sponsored by the International Measurement Confederation (IMEKO).

Important deadlines:

Abstract Deadline: 31 May 2023
 Notification of Acceptance: 30 June 2023
 Full Paper Deadline: 31 August 2023
 Forum Registration starts: 1 August 2023

Please join us and explore more:
apmf2023.nim.ac.cn.

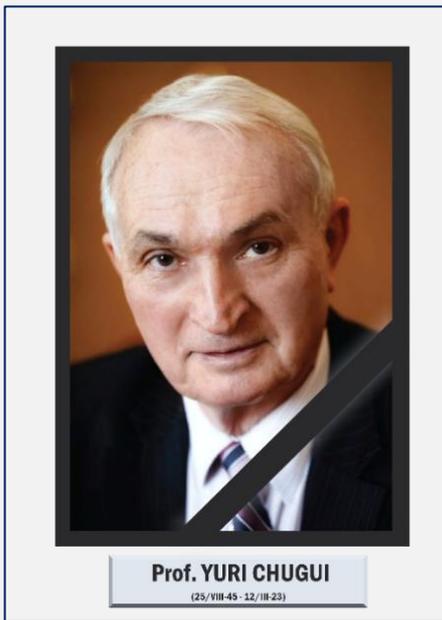
TC23 METROLOGY IN FOOD AND NUTRITION

Registration is still open!
 TC23 invites you to attend the 7th IMEKOFOODS International Conference from 25 to 27 October 2023 in Maisons-Alfort, Paris France. in Maisons-Alfort, Paris. The theme of the conference is " Worldwide

Food Trade and Consumption: Quality and Risk Assessment".

Detailed information about the conference is available on the IMEKO event portal website:
conferences.imeko.org/event/6

PROFESSOR JURI CHUGUI PASSED AWAY



We are sad to inform you that Professor Yuri Chugui, born in 1945, passed away in March 2023.

He was the Director of the Technological Design Institute of Scientific Instrument Engineering (TDI SIE SB RAS) for 30 years and, since 2017, the Scientific Director of the organization. With his passing, the Institute has suffered an irreparable loss.

Professor Chugui was also an outstanding scientist, long-time IMEKO colleague, and friend. For over 25 years, he was also one of the most influential members of the Technical Committee 14, dedicated to the Measurement of Geometrical Quantities .

In this capacity, he was very committed to what was then the innovative field of interferometric metrology in all its various forms and aspects. He was very active in organizing several memorable conferences.

In tribute, we can recall his words to his IMEKO Friends and Colleagues on one occasion:

I remember all our meetings and events, all my visits to your countries and your stay at my Institute. They were great! I am sincerely glad that I have a lot of friends and colleagues from different countries.

IMEKO is sincerely glad to have had Professor Chugui's friendship and support for many years. We offer our condolences to his family on their sad loss.