IMEKO

IMEKO International Measurement Confederation

Technical Committee TC10 Measurement for Diagnostics, Optimization and Control

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CENTRE OF EXCELLENCE EPIC Production Informatics and Control

19th IMEKO TC10 Conference

"MACRO meets NANO in Measurement for Diagnostics, Optimization and Control"

Delft, The Netherlands on September 21-22, 2023

VSL National Metrology Institute

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Opening Ceremony

Dr. Zsolt János VIHAROS

Senior research fellow, Institute for Computer Science and Control

Vice Dean for Science of the John von Neumann University

President of the Hungarian Member Organisation (MO) of IMEKO

Chairperson, IMEKO TC10 on Measurement for Diagnostics, Optimization and Control

19th IMEKO TC10 Conference: "MACRO meets NANO in Measurement for Diagnostics, Optimization and Control"

INVITATION

The International Measurement Confederation IMEKO, Technical Committee 10 on Measurement for Diagnostics, Optimization and Control (https://www.imeko.org/index.php/tc10-homepage) kindly invites you to attend the

19th IMEKO TC10 Conference: "MACRO meets NANO in Measurement for Diagnostics, Optimization and Control"

Delft, The Netherlands on September 21-22, **2023**.

The Conference is a forum for **advancing knowledge and exchange ideas** on methods, principles, instruments, technologies and IT tools, standards, industrial applications, conformity assessment, quality management and measurement challenges **on Diagnostics, Optimization and Control** as well as **their diffusion across the scientific community**. **Participants have an excellent opportunity to meet** top specialists from industry and academia all over the world 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.

MTA SZTAKI
Hungarian Academy of Sciences
Institute for Computer Science and Control

About IMEKO
International Measurement Confederation

IMEKO is a **non-governmental federation** of **41 Member Organizations** individually concerned with the ***advancement of measurement technology***. Its fundamental objectives are the promotion of

- international **interchange of scientific and technical information**
- in the field of **measurement and instrumentation** and
- the enhancement of **international co-operation among scientists and engineers from research and industry**.

Founded in
1958
Budapest
Hungary

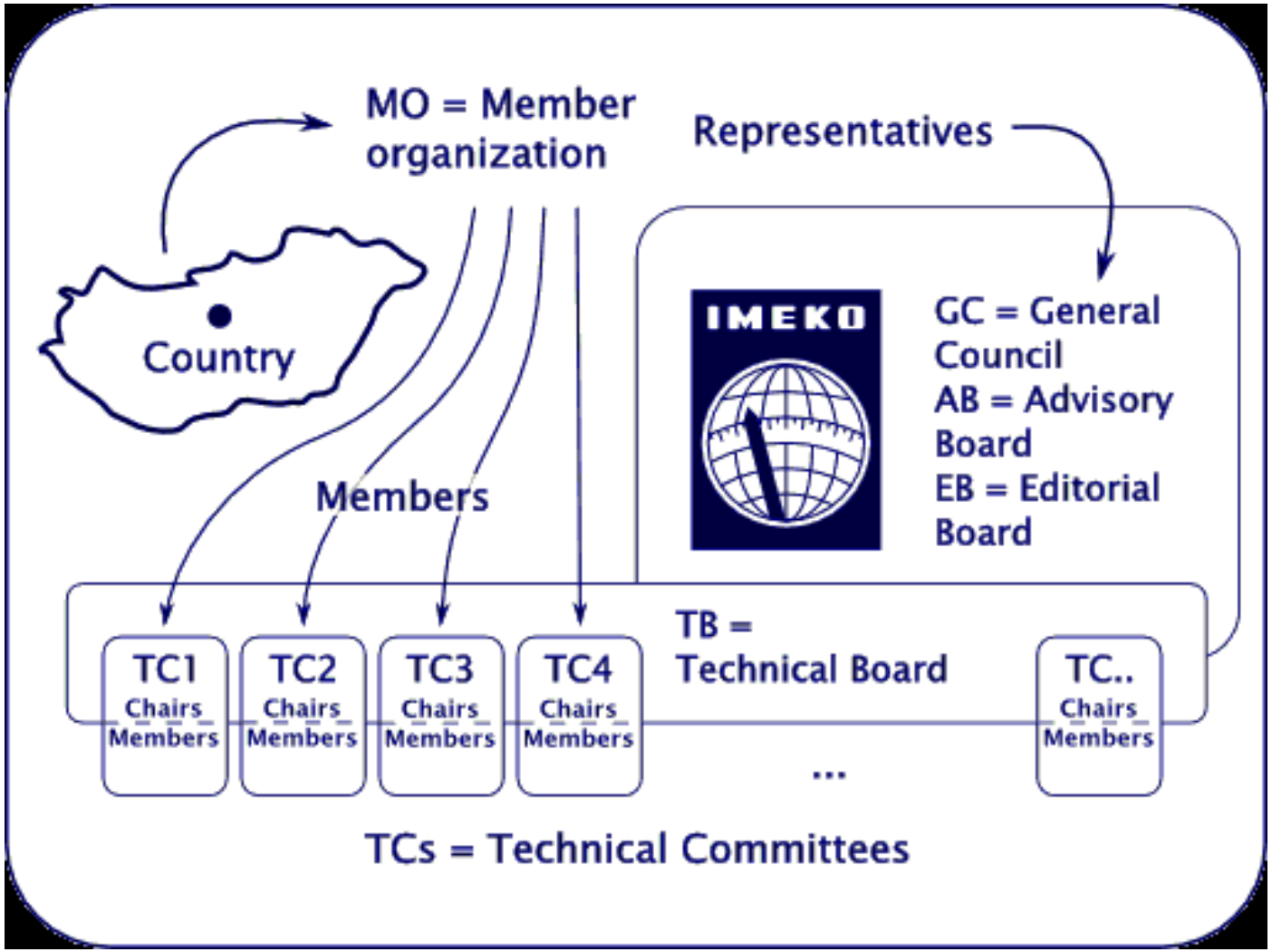
Hungary is hosting the secretariat

An example from the history: 2nd IMEKO World Congress

Budapest, Hungary, 1961

The IMEKO President, Professor Frank Härtig, brought a toast at the festive dinner. As part of the celebration, the cake was served.

About IMEKO
International Measurement Confederation



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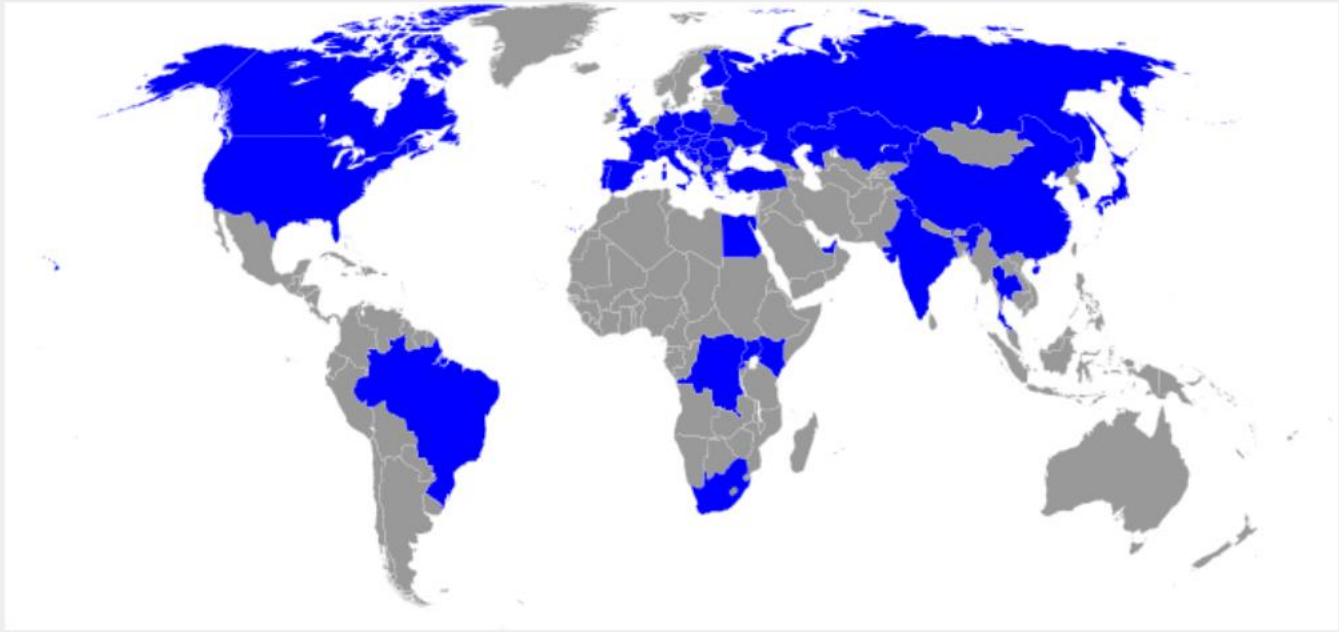
Map of the World with Countries having an IMEKO Member Organization or Institute



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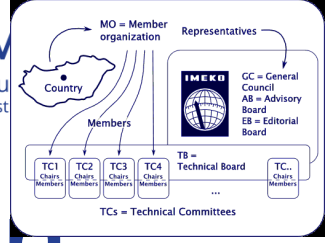

- TC1 Education and Training in Measurement and Instrumentation (established in: 1967)
- TC2 Photonics (established in 1962)
- TC3 Measurement of Force, Mass and Torque (1967-1998: Measurement of Force and Mass)
- TC4 Measurement of Electrical Quantities (established in 1984)
- TC5 Hardness Measurement (established in 1973)
- TC6 Digitalization (until 2020: Vocabulary Committee)
- TC7 Measurement Science (1975-1993: Measurement Theory)
- TC8 Traceability in Metrology (established in 1972)
- TC9 Flow Measurement (established in 1976)
- TC10 Diagnostics, Optimization & Control (established in 1976)
- TC11 Measurement in Testing, Inspection and Certification
- TC12 Temperature and Thermal Measurements (established in 1979)
- TC13 Measurements in Biology and Medicine (established in 1980)
- TC14 Measurement of Geometrical Quantities (established in 1980)
- TC15 Experimental Mechanics (established in 1984)
- TC16 Pressure and Vacuum Measurement (established in 1986)
- TC17 Measurement in Robotics (established in 1987)
- TC18 Measurement of Human Functions (established in 1998)
- TC19 Environmental Measurements (established in 1999)
- TC20 Measurements of Energy and Related Quantities (1999 - 2010: Measurement Techniques for the Construction Industry, 2010 - 2015: Energy Measurement)
- TC21 Mathematical Tools for Measurements (established in 2004)
- TC22 Vibration Measurement (established in 2005)
- TC23 Metrology in Food and Nutrition (established in 2006)
- TC24 Chemical Measurements (established in 2008)
- TC25 Quantum Measurement and Quantum Information (established in 2021)

IMEKO TC10 History (*19* Conferences + 17/23 World Congresses)

SZTAKI

IMEKO TC10 Events

Name	Year	Place	Country
TC10 Conference 2022	2022	Warsaw	POLAND
TC10 Conference 2020 (ONLINE)	2020	Dubrovnik	CROATIA
TC10 Conference 2019	2019	Berlin	GERMANY
TC10 Workshop on Technical Diagnostics 2017	2017	Budapest	HUNGARY
TC10 Workshop on Technical Diagnostics 2016	2016	Milano	ITALY
TC10 Workshop on Technical Diagnostics 2014	2014	Warsaw	POLAND
TC10 Workshop 2013	2013	Florence	ITALY
TC10 Workshop 2010	2010	Krakow	POLAND
TC10 International Workshop on Technical Diagnostics 2008	2008	Budapest	HUNGARY
TC10 Conference 2005	2005	Budapest	HUNGARY
TC10 Symposium 2001	2001	Compiègne	FRANCE
TC10 Symposium 1999	1999	Wroclaw	POLAND
TC10 Workshop 1995	1995	Trondheim	NORWAY
TC10 Symposium 1992	1992	Dresden	GERMANY
TC10 Workshop 1991	1991	Warsaw	POLAND
TC10 Symposium 1990	1990	Helsinki	FINLAND
TC10 Conference 1989	1989	Prague	CZECHOSLOVAKIA
TC10 Workshop 1988	1988	Budapest	HUNGARY
TC10 Conference 1987	1987	Paderborn	F. R. GERMANY
TC10 Conference 1986	1986	Dubrovnik	YUGOSLAVIA
TC10 Conference 1981	1981	London	UNITED KINGDOM
2-day Meeting of TC10 1980	1980	Nienwagen	THE NETHERLANDS
TC10 Conference 1979	1979	Karlovy Vary	CZECHOSLOVAKIA

IMEKO World Congresses

I IMEKO World Congress	1958	Budapest	HUNGARY
II IMEKO World Congress	1961	Budapest	HUNGARY
III IMEKO World Congress	1964	Stockholm	SWEDEN
IV IMEKO World Congress	1967	Warsaw	POLAND
V IMEKO World Congress	1970	Versailles	FRANCE
VI IMEKO World Congress	1973	Dresden	GERMAN D. R.
VII IMEKO World Congress	1976	London	UNITED KINGDOM
VIII IMEKO World Congress	1979	Moscow	SOVIET UNION
IX IMEKO World Congress	1982	Berlin (West)	F. R. GERMANY
X IMEKO World Congress	1985	Prague	CZECHOSLOVAKIA
XI IMEKO World Congress	1988	Houston/Texas	USA
XII IMEKO World Congress	1991	Beijing	P. R. CHINA
XIII IMEKO World Congress	1994	Torino	ITALY
XIV IMEKO World Congress	1997	Tampere	FINLAND
XV IMEKO World Congress	1999	Osaka	JAPAN
XVI IMEKO World Congress	2000	Vienna	AUSTRIA
XVII IMEKO World Congress	2003	Dubrovnik	CROATIA
XVIII IMEKO World Congress	2006	Rio de Janeiro	BRAZIL
XIX IMEKO World Congress	2009	Lisbon	PORTUGAL
XX IMEKO World Congress	2012	Busan	REPUBLIC of KOREA
XXI IMEKO World Congress	2015	Prague	CZECH REPUBLIC
XXII IMEKO World Congress	2018	Belfast	UNITED KINGDOM
XXIII IMEKO World Congress	2021	Yokohama	JAPAN
XXIV IMEKO World Congress	2024	Hamburg	GERMANY

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INVITED KEYNOTE LECTURERS

Keynote speaker

Dr. Richard Quintanilha

Optical System Engineer, Corporate Research & Technology Carl Zeiss AG, Carl-Zeiss-Straße 22, 73447 Oberkochen, Germany

Dr. Richard Quintanilha received his PhD degree in physics from the University of Grenoble, France in 2005, for his research in spectroscopic scatterometry carried out within Crolles 2 Alliance and CEA\LETI. He joined the National Institute for Standard and Technology (NIST), The USA, Gaithersburg, MD in 2006 where he worked in the development and research of an UV transmission microscope and a deep UV reflective microscope for standards and metrology mainly dedicated to microelectronic industry process control (CD measurement, defectivity, etc.). He joined ASML Research Netherlands B.V. Veldhoven, The Netherlands in 2010 in the Sensors, Metrology and Computational Modeling (SMC) group where his work was focused on metrology for future technology nodes. He joined in 2018 ZEISS-SMT in Oberkochen, Germany. His work was focused on metrology for EUV mirror characterization. Since 2022, He works in ZEISS AG Corporate Research and Technology as an Optical System Engineer.

Lecture: ***Carl ZEISS and Metrologies***

General introduction to ZEISS group and its different Segments with a special place for the Semiconductor Manufacturing Technology Segment. The talk will focus on manufacturing and associated metrology requirements challenges through some examples coming from different segments of the company. A more detail presentation of the DUV-EUV optics manufacturing and metrology is discussed.

19th IMEKO TC10 Conference: "MACRO meets NANO in Measurement for Diagnostics, Optimization and Control"

Keynote speaker

Poul Erik Hansen

Principal scientist at Principal scientist, Danich National Metrology Institute, Kogle Alle 5, DK-2970 Hørsholm, Denmark

Poul-Erik Hansen got his Ph.D. in Physics in 1998 at Aalborg University, Denmark. Since 2006 he has worked as a research scientist at Danish Fundamental Metrology in the field of surface metrology, scatterometry as well as ellipsometry and confocal microscopy. He also has an expertise in advanced mathematical modeling of the light matter interaction. Poul-Erik is a leader of several Danish projects on optical Metrology and scattering of nanosized objects and has authored more than 60 papers in international peer reviewed journals.

Lecture: ***Traceability and uncertainty in optical measurements***

The talk is meant to provide users of metrology and the general public with a simple yet comprehensive overview on the subject. It targets those who are not familiar with the topic and who require an introduction, as well as those who are involved in metrology at various levels but who want to know more about the subject or simply gain specific information. Metrology is the science of measurements and covers three main activities. 1) The definition of internationally accepted units of measurement, 2) The realization of units of measurement by scientific methods and 3) The establishment of traceability chains by determining and documenting the value and accuracy of a measurement and disseminating that knowledge. This talk focuses on the third aspect and we will show examples of current work to establish an internationally recognized traceability chain for optical microscopy, reflectometry, scatterometry and ellipsometry at the micrometre and nanometre scale. To do this we need measurement institutes/companies that can provide high quality measurement, fabrication institutes/ companies that can manufacture high quality physical samples and a protocol for how each participant should measure and analyse the samples to obtain the required measurand and uncertainty. All the data will then be compared and checked for internal conformity and if available conformity with reference measurement from an established traceability chain.

The talk also will address measurement techniques such as optical microscopy, spectroscopic scatterometry, spectroscopic ellipsometry and reflectometry as well as data processing and the measurement uncertainty.

TC10 - Measurement for Diagnostics, Optimization & Control - Aims

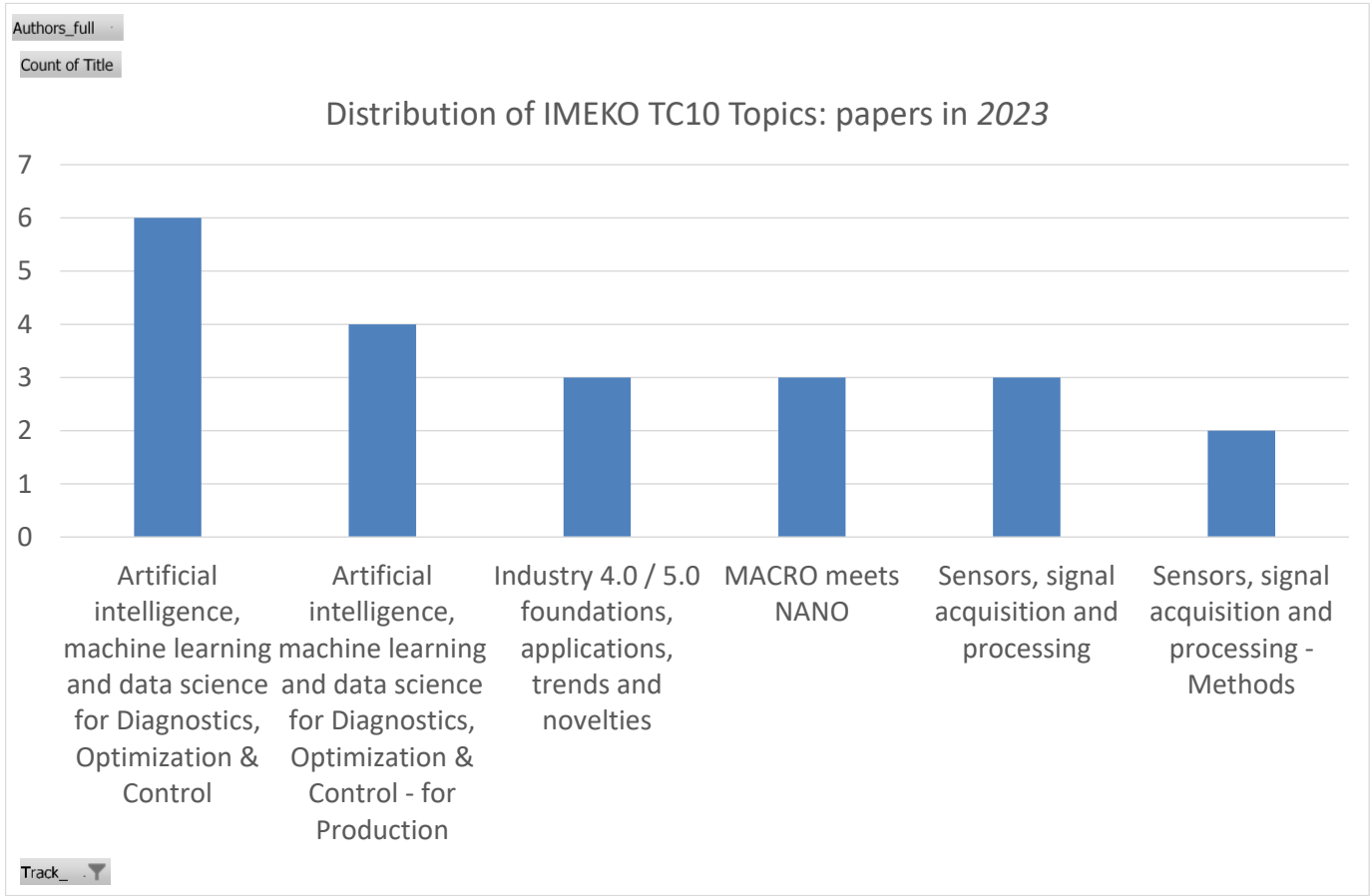
Aims and objectives of IMEKO TC10 - Measurement for Diagnostics, Optimization & Control are to facilitate the exchange of scientific and technical information on diagnostics, optimization & control methods, measurement, instrumentation and systems by organizing symposia, discussion meetings and encouraging the publication of scientific papers. Also, the co-operation between scientists and engineers in different subject areas in solving various diagnostics, optimization & control problems is supported.

Topics:

- T1 - Basic principles and development trends in Measurement for Diagnostics, Optimization & Control
- T2 - Sensors, signal acquisition and processing for Diagnostics, Optimization & Control
- T3 - Condition monitoring and maintenance of industrial processes, plants and complex systems
- T4 - Failure & fault detection and prognosis
- T5 - Artificial intelligence, machine learning and data science for Diagnostics, Optimization & Control
- T6 - Industry 4.0 foundations, applications, trends and novelties
- T7 - Methods and algorithms for real-time Diagnostics, Optimization & Control
- T8 - In the loop testing, design, and simulation approaches of dynamic systems
- T9 - Embedded systems in Diagnostics, Optimization & Control
- T10 - Uncertainty in Diagnostics, Optimization & Control
- T11 - Digital transformation
- T12 - Internet of Things (IoT) oriented Measurement for Diagnostics, Optimization & Control
- T13 - Human aspects in Diagnostics, Optimisation & Control
- T14 - Measurement for Diagnostics, Optimization & Control for the improvement of quality of life and environment
- T15 - Product conformity assessment, quality management and process analysis
- T16 - Measurement for Diagnostics, Optimization & Control for safety and risk assessment
- T17 - Non-destructive Testing for Diagnostics, Optimization & Control
- T18 - Standards in Measurement for Diagnostics, Optimization & Control
- T19 - Mechanical systems' principles in Measurement for Diagnostics, Optimization & Control
- T20 - Instrument fault detection, optimization & control in autonomous driving vehicles
- T21 - Diagnostics, Optimization & Control applications in various sectors like industry, transportation, mechatronics, electronics, acoustics, urban systems, living environment, civil engineering, technology of health systems, avionics, automotive, energy, machining, green environment, water treatment and biomedical fields, etc.

Key scientific topics - *2023* (21 published papers)

- **T5 - Artificial intelligence, machine learning and data science for Diagnostics, Optimization & Control**
- **T2 - Sensors, signal acquisition and processing for Diagnostics, Optimization & Control**
- **T6 - Industry 4.0 foundations, applications, trends and novelties**
- **MACRO meets NANO**



→Increase impact

→Collaboration potential

→Follow others' results

Past: 2 + 1
Membership candidate discussions

Present: 2 new members

Assignment for ALL:
looking for new members

Name	Position	Country
Dr. Zsolt Janos Viharos	TC10 Chairperson	HUNGARY
Prof. Lorenzo Ciani	TC10 Vice Chairperson	ITALY
Dr. Piotr Bilski	TC10 Scientific Secretary	POLAND
Prof. Álvaro Silva Ribeiro		PORTUGAL
Prof. Marcantonio Catelani	Honorary member	ITALY
Prof. Laszlo Monostori		HUNGARY
Prof. Artur Lopes Ribeiro		PORTUGAL
Yakov Ben-Haim		ISRAEL
Prof. Eduard Egusquiza		SPAIN
Prof. B. K. N. Rao		UNITED KINGDOM
Prof. He Zhengjia		CHINA
Prof. Romauld Zielonko		POLAND
Dr. Eng. Yukio Hiranaka		JAPAN
Dr. Justinas Janulevicius		LITHUANIA
Dr. Lauryna Siaudinyte		NETHERLANDS
Prof. Helena Geirinhas Ramos		PORTUGAL
Dr. Oleg Bushuev		RUSSIA
Prof. Ephraim Suhir		USA
Prof. Diego Galar		SWEDEN
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Mr Balázs Scherer		HUNGARY
Prof. Giulio D'Emilia		ITALY
Prof. Dr. Ing. David Delaux		FRANCE
Dr. Marco Carratú		ITALY
Dr. Gábor Nick		HUNGARY
Gabriele Patrizi		ITALY
Prof. Chao-Ching Ho		TAIWAN
Ádám Szaller		HUNGARY

Key, actual challenges

- **On TC level**
  - ***Internationalization***
    - 41 IMEKO member „country” vs. 8-10 „TC10 active member country”
      - The TC10 topic is everywhere → finding the active, motivated people in additional IMEKO countries
        - *Missing*: Albania, Austria, Belgium, Bosnia and Herzegovina, Brazil, Bulgaria, Canada, China, Congo, Croatia, Czech Republic, Finland, Germany, Greece, India, Kazakhstan, Kenya, Korea, Romania, Rwanda, Russia, Serbia, Slovakia, Slovenia, South Afrika, Spain, Switzerland, Thailand, Türkiye, Uganda, Ukraine, United Arab Emirates, United Kingdom, USA
        - BUT: The Netherlands…Taiwan…
  - Finding successors for *Inactive members*
  - *How to share the work* among TC10 leaders
  - *Conference* host country: having *more papers/participants by the host*
  - Various difficulties with the new conferencing system (support needed)
  - Lack of joint scientific projects
- **On IMEKO level**
  - TC Functioning WG – to continue

Encouraging new members

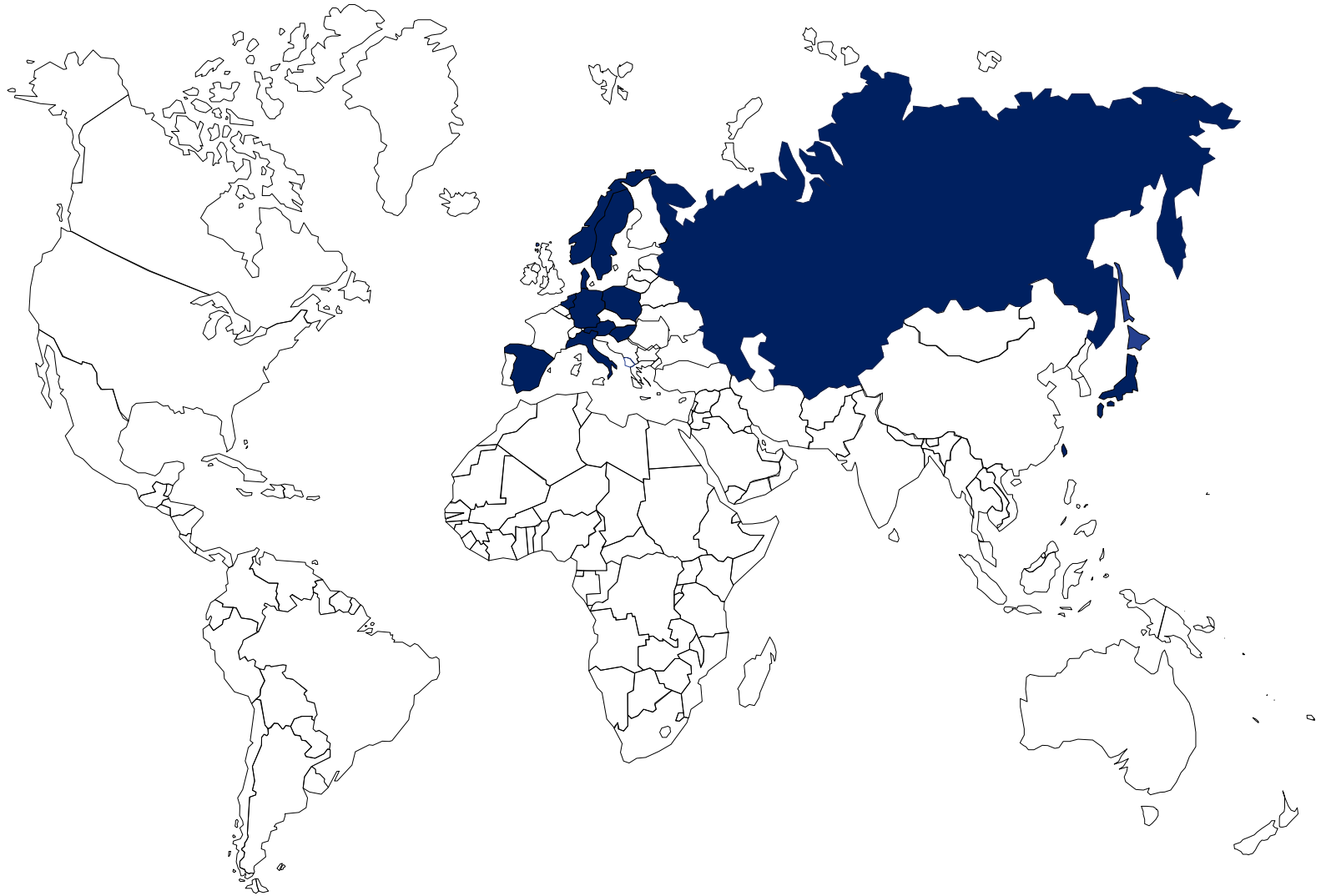
- **The main responsibilities for current and future IMEKO TC10 members:**
  - Do research in our TC10 fields, send papers and ***participate (with presentations) on (all) the TC10 conferences, workshops and the IMEKO Word Congresses***
  - Explore, get in contacts and **build relationship with researchers in his/her own country doing research in our TC10 fields – call attention to IMEKO TC10 results, conferences, papers in their country**
  - **Do networking inside our TC10**, do **common projects**, expert exchange, common scientific collaborations, etc.
  - ***Enjoy the scientific life inside our IMEKO TC10 on Diagnostics, Optimization and Control***

- **Sending an**
  - **(preferred Europass) CV and**
  - **a short motivation letter**

  to TC10 Chairperson (viharos.zsolt@sztaki.hu) with cc. to imeko@hunmeko.org

  and
  - the TC10 Chairperson (Dr. Zsolt János Viharos) will organise the next steps:
    - discussion with the candidate
    - nomination to IMEKO secretary
    - IMEKO secretary will organize the approval from the relevant NMO presidents
  - ***Having all the documents, the approval will be in next IMEKO GC meeting***
    - This will be the starting day of the membership

Authors (from 13 countries)



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Technical Committee TC10
Measurement for Diagnostics, Optimization and Control

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Dr. Lauryna Siaudinyte	THE NETHERLANDS

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Dr. Marco Carratú	ITALY
Dr. Gábor Nick	HUNGARY
Dr. Gabriele Patrizi	ITALY

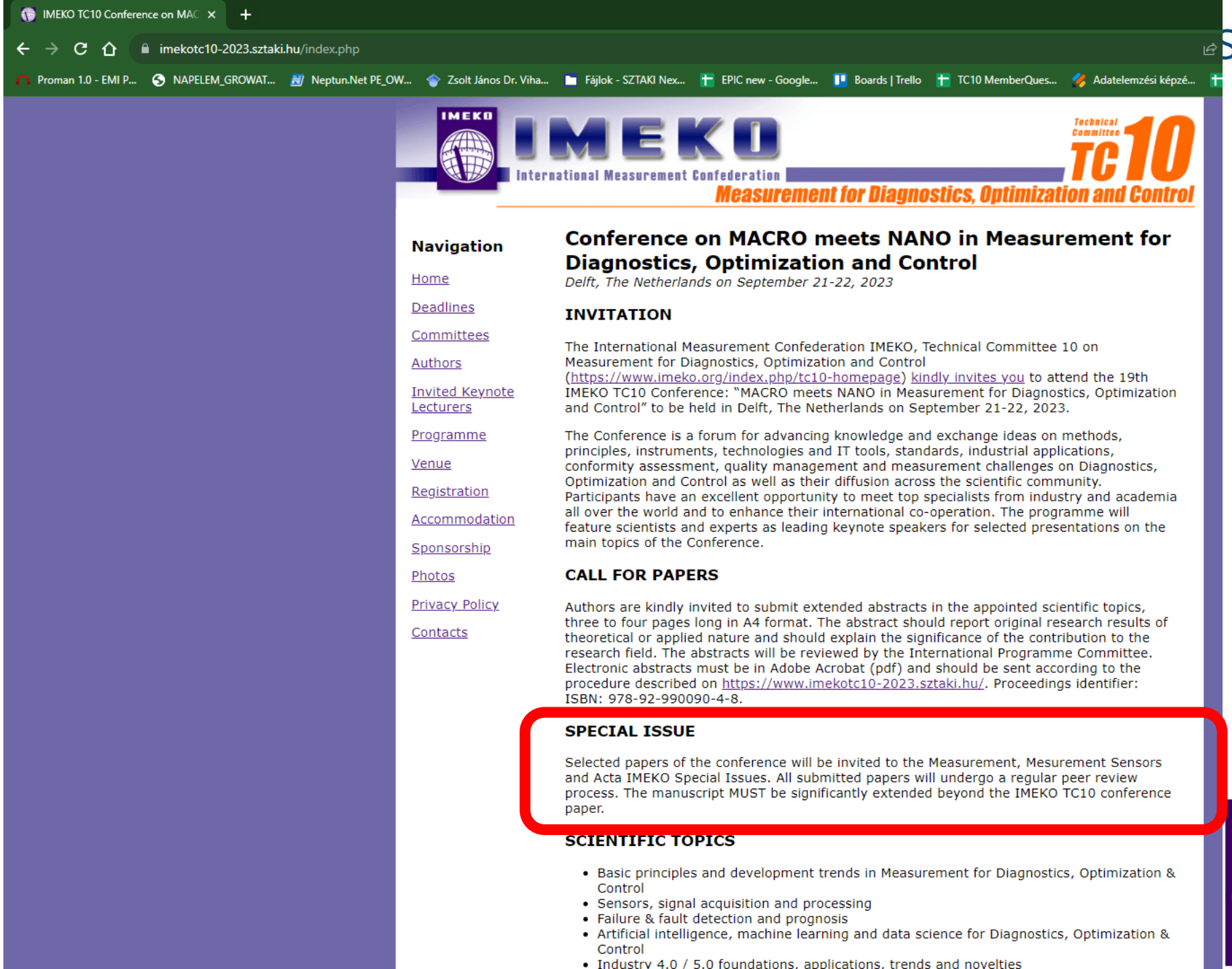
Thank you for the excellent operative organization!

- 150+ emails
- 20+ online meetings
- 40+ calls
- 50+ messages
- …

Dr. Lauryna Siaudinyté

Judit Stefkó
Congress Ltd.

- Outcomes
  1. **Proceedings of the conference**
     - NOT Open Access
  2. **Proceedings on the IMEKO website**
     - Open Access
     - **With DOI !**
     - Indexed in many databases
  3. **Special issue(s)**
     - **Case-based**
     - **Full review - risky**



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Technical Committee TC10 Measurement for Diagnostics, Optimization and Control

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VSL National Metrology Institute

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pillars is not taken into account in the inverse modelling. Specifically, we find for R=1.0 that the estimated width is 320 nm, instead of 340 nm as found for the corner-rounded pillars. On the other hand, the estimated height is 140 nm in both cases.

Table 2: Parameters from inverse modelling

Period / nm	Width / nm	Height / nm	R
Nominal	250	150	1.0
Ellipsometry	340	140	0.8

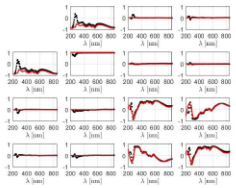

Figure 7: Ellipsometry data showing 13 Mueller matrix elements and the simulation curves of the best fit solution, see Table 2.

VII. CONCLUSIONS AND OUTLOOK

In this paper, we have discussed the fabrication of reference samples for nano-structured devices. According to the process chain shown, several such elements were fabricated and are subsequently investigated by SEM and scatterometry methods. Work on the reconstruction has been initiated.

VIII. ACKNOWLEDGMENTS

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[9] **Hansen, P.-E., Johannsen, S. R., Jensen, S. A., and Madsen, J. S. M.**, "Enhanced measurement accuracy for nanostructures using hybrid metrology," Frontiers in Physics , 1–10 (2022).

[10] **Jana Grundmann, Tim Käseberg, Bernd Bodermann,** Optical measurements and numerical simulations of the Mueller matrix at silicon nanowire structures, SPIE (2023)

[11] **Chris A. Mack**, "Generating random rough edges, surfaces, and volumes," Appl. Opt. 52, 1472-1480 (2013)

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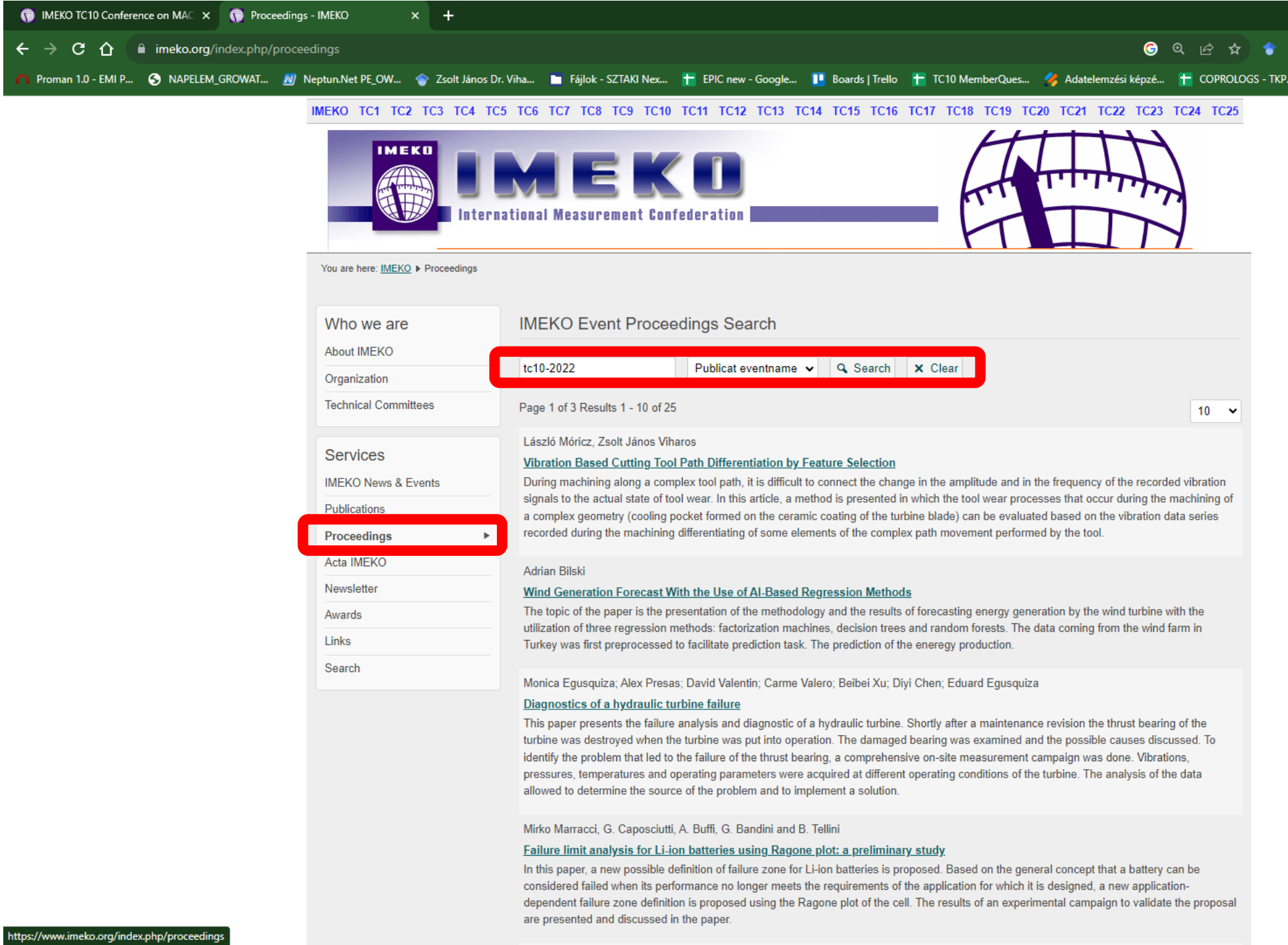
- Outcomes
  1. Proceedings of the conference
     - NOT Open Access
  2. **Proceedings on the IMEKO website**
     - **Open Access**
     - **With DOI !**
     - Indexed in many databases
  3. Special issue(s)
     - Case-based
     - Full review - risky



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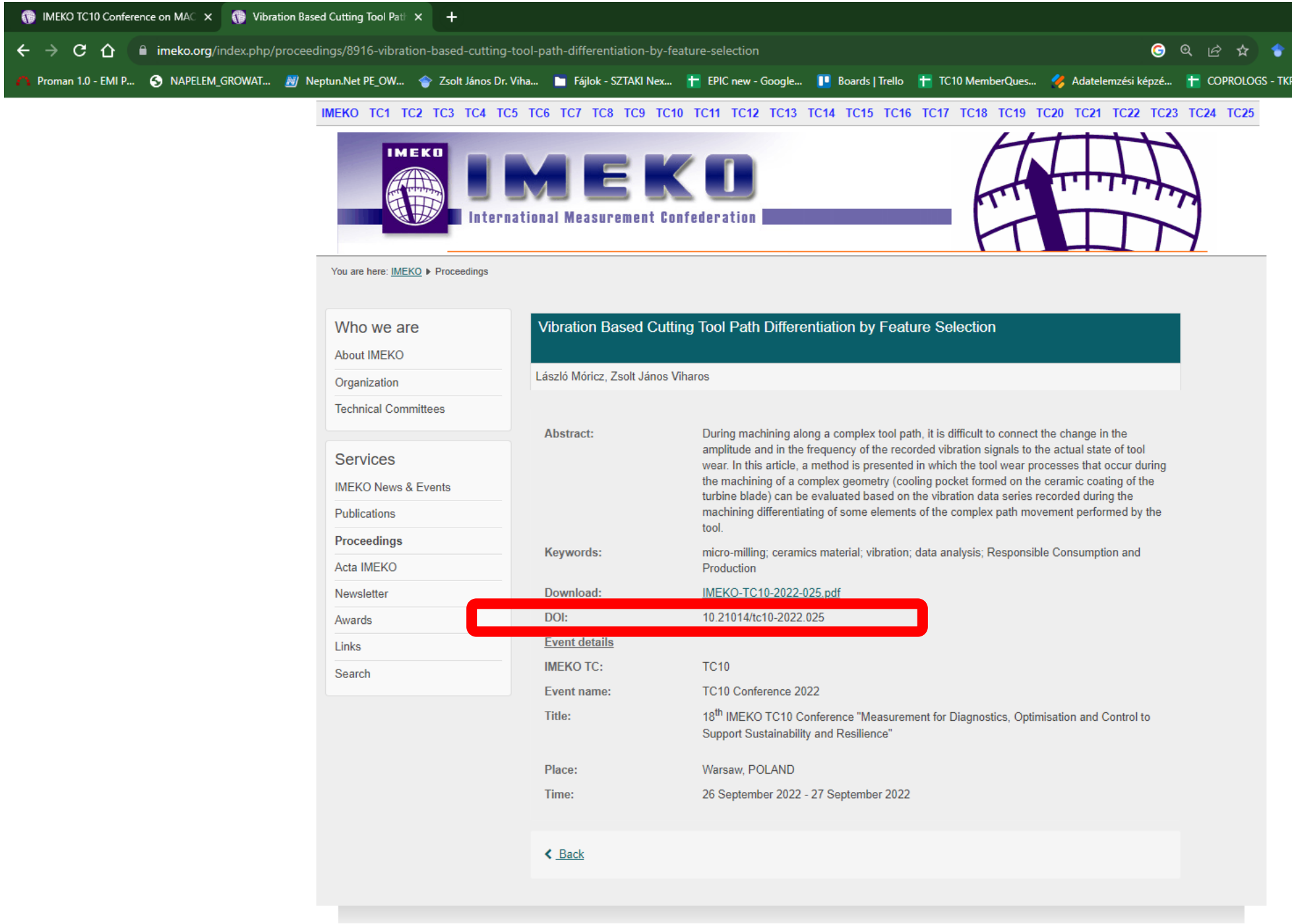

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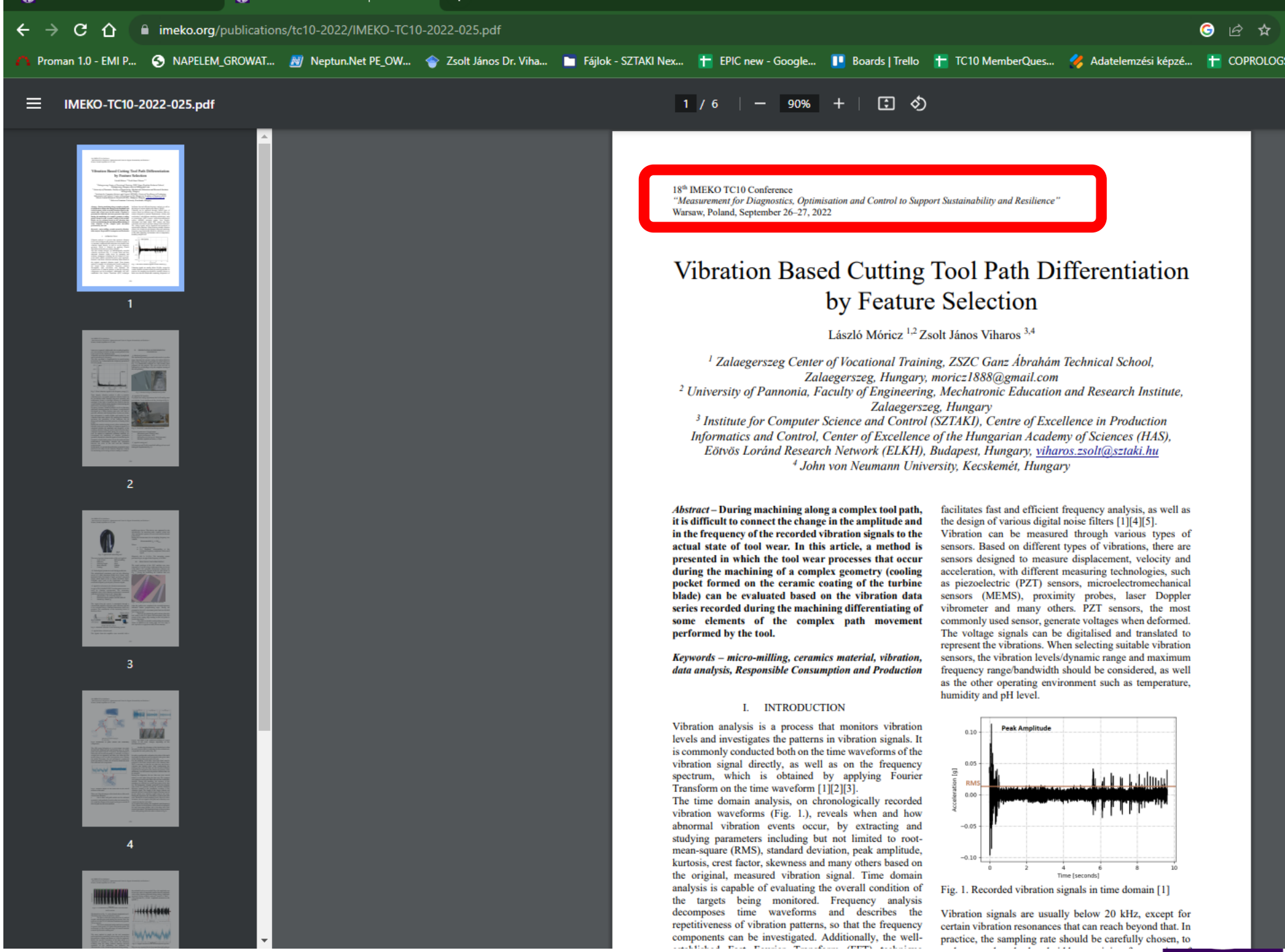
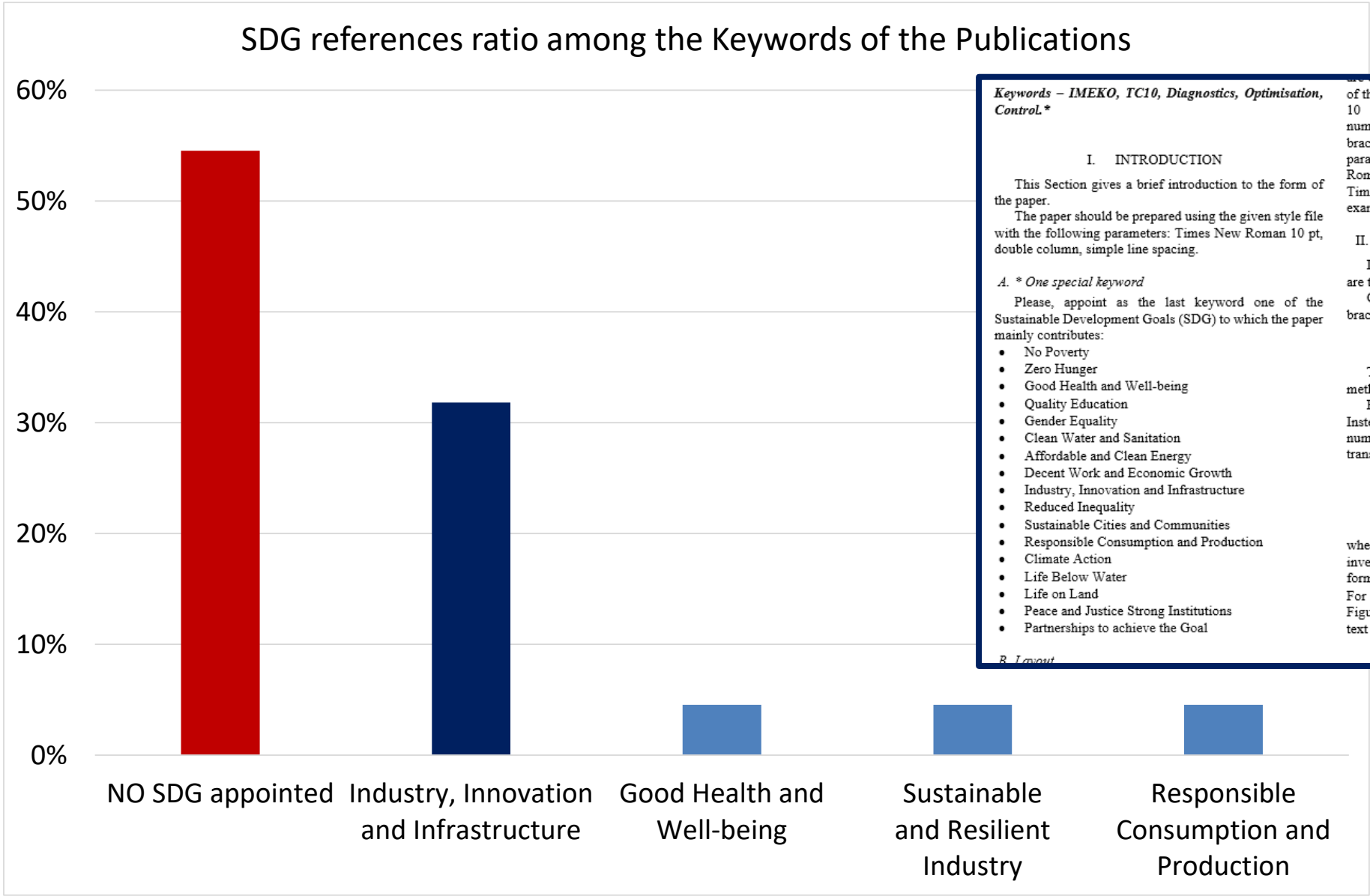


Keywords vs. SDG (Sustainable Development Goals)



IMEKO International Measurement Confederation

Technical Committee TC10 Measurement for Diagnostics, Optimization and Control

SZTAKI

2023.09.21 Thursday

Hotel Arsenaal, Delft (Korte Geer 1, Delft)

9:00 - 9:30	REGISTRATION - Hotel Arsenaal
9:30 - 10:00	**Welcome, Conference Openning - Hotel Arsenaal**
10:00 - 10:45	**Invited Key Lecturer: Dr. Richard Quintanilha** Optical System Engineer Corporate Research & Technology; Carl Zeiss AG Carl ZEISS and Metrologies
10:45 - 11:00	COFFEE BREAK - Hotel Arsenaal
Scientific session	**Session chair: Dr. Zsolt János Viharos - Artificial intelligence, machine learning and data science for Diagnostics, Optimization & Control - for Production**
11:00 - 11:20	Chao-Ching Ho, Chun-Han Liu, Ming-Chieh Kao: Multi-task Learning Based on Deep Convolutional Neural Networks for Surface Defect Detection of Metal Gaskets
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12:00 - 12:20	Leonhard Czarnetzki, David Karnok, Viola Gallina, Johannes Breitschopf, Gashi Milot, Matthias Karner, Catherine Laflamme: Improving the Planning Quality in Practice with Artificial Intelligence
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Scientific session	**Session chair: Prof. Lorenzo Ciani - Artificial intelligence, machine learning and data science for Diagnostics, Optimization & Control**
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15:20 - 15:50	COFFEE BREAK - Hotel Arsenaal
15:50 - 17:00	**All Participants - IMEKO TC10 Meeting**
19:00 -	**Gala Dinner in Delfts Brouwhuis** Hippolytusbuurt 43; 2611HM Delft; 06-43255788

IMEKO International Measurement Confederation

Technical Committee TC10 Measurement for Diagnostics, Optimization and Control

SZTAKI

2023.09.22 Friday

Hotel Arsenaal, Delft (Korte Geer 1, Delft)

Scientific session	**Session chair: Prof. Piotr Bilski - Sensors, signal acquisition and processing**
9:00 - 9:20	Gabriele Patrizi, Marco Carratù, Lorenzo Ciani, Paolo Sommella, Roberto Singuaroli, Marcantonio Catelani, Antonio Pietrosanto: Dynamic characterization of MEMS-based Inertial Unit under combined vibration stresses
9:20 - 9:40	Zsolt Tóth, Eszter Kocsis, Attila Lukács, István Szalai: No-clean flux residues detection with impedance measurements
9:40 - 10:00	Giulio D'Emilia, Luciano Chiominto, Antonella Gaspari, Emanuela Natale, Andrea Prato, Alessandro Schiavi: A contribution to trustworthiness of data from digital MEMS accelerometers for smart mobility
10:00 - 10:20	Raissa Schiavoni, Antonio Masciullo, Andrea Cataldo: Skin monitoring and diagnostics: towards a wearable low-cost system
10:20 - 10:40	Alexander Shestakov, Olga Ibryaeva, Victoria Eremeeva, Vladimir Sinitsin: The Detection of Rotor Bar Faults in Induction Motors Using the Recursive Matrix Pencil Method
10:40 - 11:10	COFFEE BREAK - Hotel Arsenaal
Scientific session	**Session chair: Prof. Giulio D'Emilia - Industry 4.0 / 5.0 foundations, applications, trends and novelties**
11:10 - 11:30	Botond Kádár, Eduardo Colangelo, Gábor Nick, László Fükő, Ádám Szaller: Flexible Manufacturing Concept at Bosch: A low-cost implementation of an Industry 4.0 concept
11:30 - 11:50	Ferenc Kása, Péter Wolf, Tamás Gyulai, Zsolt János Viharos: Learning Factories towards Industry 5.0: Evolutionary or Revolutionary?
11:50 - 12:10	Marc Vila Forteza, Ajit Kumar Verma, Diego Galar Pascual, Uday Kumar: RELIABILITY PREDICTION OF CENTRIFUGAL PUMPS IN DIGITIZED OIL & GAS ENVIRONMENT
12:10 - 13:00	LUNCH - Hotel Arsenaal

13:00 - 13:40	**Invited Key Lecturer: Poul Erik Hansen** Principal scientist Danich National Metrology Institute Traceability and uncertainty in optical measurements
Scientific session	**Session chair: Dr. Lauryna Siaudinyté: MACRO meets NANO**
13:40 - 14:00	Atul Tiwari, Sebastian Heidenreich, Victor Soltwisch: Bayesian approach for determining the optical constants of layered systems using EUV reflectometry: The effect of different priors
14:00 - 14:20	Poul-Erik Hansen, Lauryna Siaudinyte, Thomas Siefke: In situ calibration of numerical aperture effects in optical microscopes
14:20 - 14:40	Thomas Siefke, Astrid Tranum Rømer, Lauryna Siaudinyté, Poul-Erik Hansen: Fine details of structural deviations in reference samples for scatterometry
14:40 - 15:10	COFFEE BREAK - Hotel Arsenaal
15:10 - 16:00	**Closing and Award Ceremony - Hotel Arsenaal**

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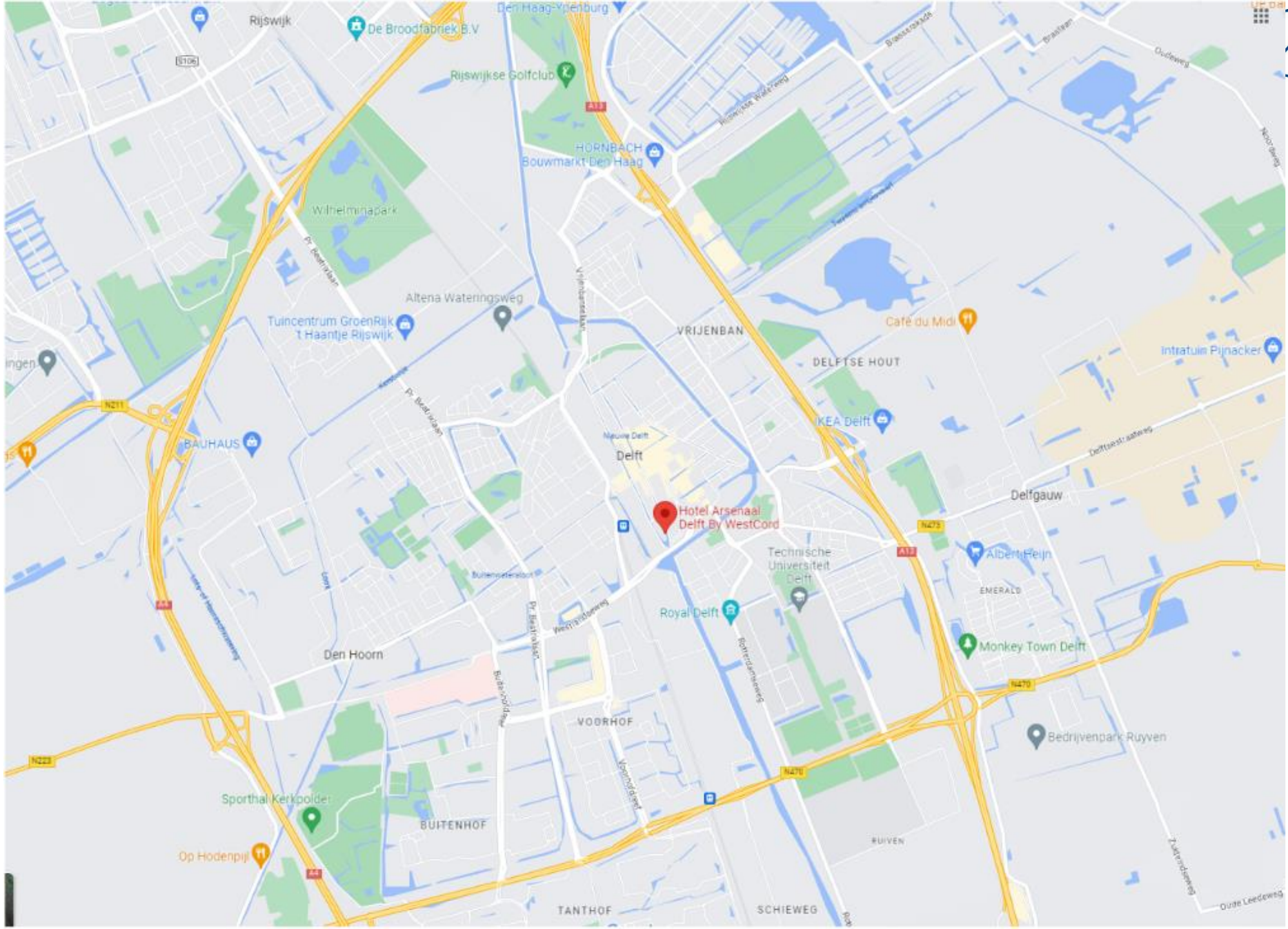
Awards

- Best Paper
- Best Paper presented by a Woman
- Best Paper presented by a Young Researcher (<35 ~ 50% of participants)


The Hague
Zoetermeer
Rotterdam
Hotel Arsenaal
Delft By WestCord
Madurodam
Mauritshuis
Mariahoeve
Leidschendam
Voorburg
Benthuizen
Hazerswoude-Dorp
Nootdorp
Rijswijk
Wateringen
Monster
Pijnacker
Lansinghage
Moerkapelle
Bleiswijk
Zevenhuizen
Honselersdijk
s-Gravenzande
Naaldwijk
Den Hoorn
Berkel en Rodenrijs
Hook of Holland
De Lier
Schipluiden
Europoort Rotterdam
Maasland
Dijkpolder
Maassluis
Schiedam
Vlaardingen
Vopwijk
Rozenburg
Brielle
DELFSHAVEN
PRINS ALEXANDER
Capelle aan den IJssel
Krimpen aan den IJssel
Google
Layers


Rijswijk
De Broodfabriek B.V
Den Haag-Vrederburg
Rijswijkse Golfclub
HORNBACH
Bouwmarkt Den Haag
Wilhelminapark
Altena Wateringsweg
Tuincentrum GroenRijk
't Haantje Rijswijk
VRIJENBAN
Café du Midi
Intratuin Pijnacker
DELFTSE HOUT
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Delft
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Albert Heijn
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Den Hoorn
VOORHOF
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Sporthal Kerkpolder
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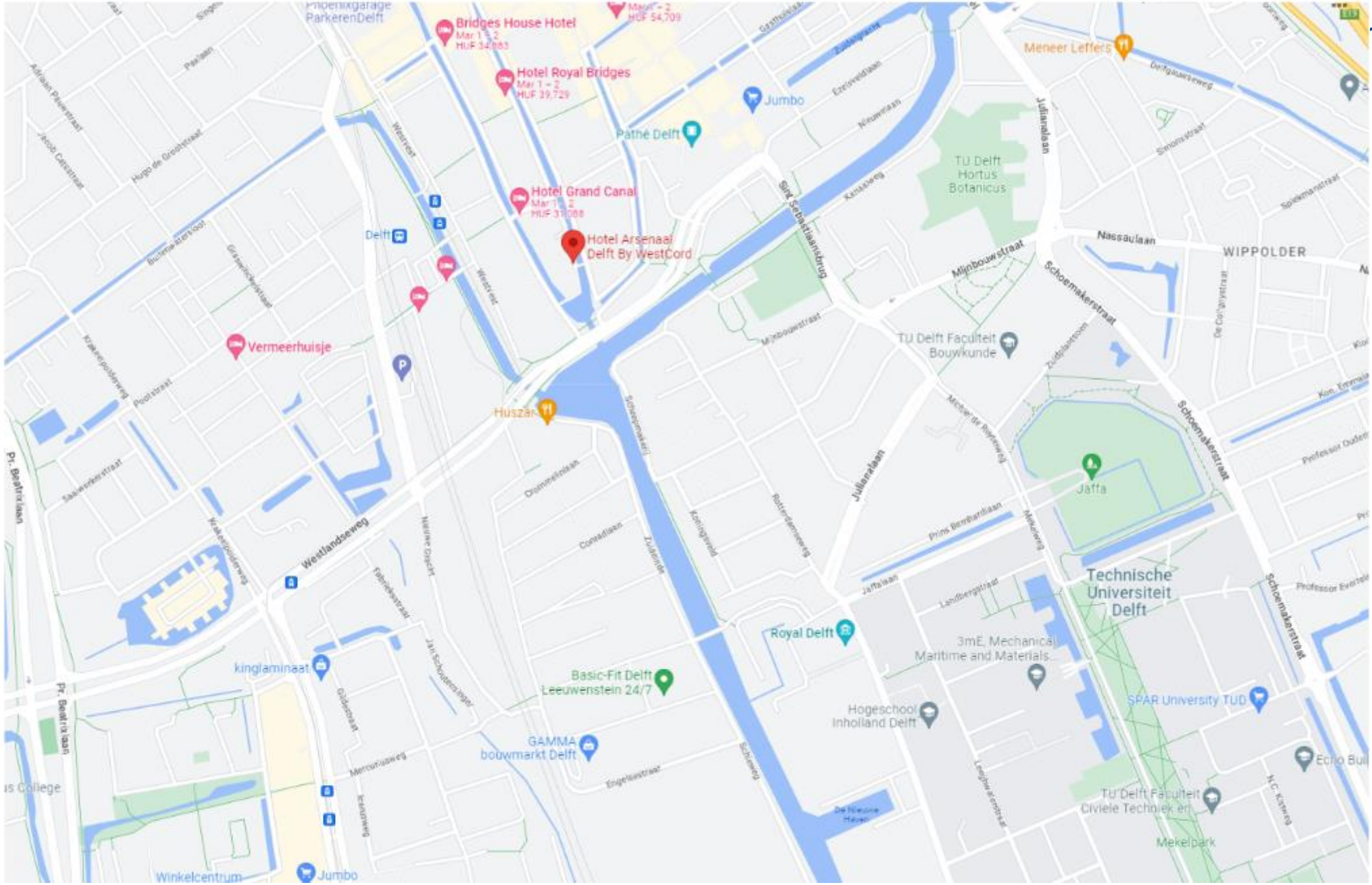
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Hotel Royal Bridges
Hotel Grand Canal
Hotel Arsenaal Delft By WestCord
Vermeerhuisje
Huszár
Jumbo
Pathé Delft
Delft
Meneer Leffers
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Nassaulaan
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Technische Universiteit Delft
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Hogeschool Inholland Delft
SPAR University TUD
TU Delft Faculteit Civiele Techniek en
Mekelpark
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kinglaminaat
Winkelcentrum
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Westlandseweg
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Poststraat
Prins Bernhardlaan
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Professor Evertsenlaan
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IMEKO TC10 Conference on MAC

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Proman 1.0 - EMI P... | NAPELEM_GROWAT... | Neptun.Net PE_OW... | Zsolt János Dr. Viha... | Fájlok - SZTAKI Nex... | EPIC new - Google... | Boards | Trello | TC10 MemberQues... | Adatelemzési képzé... | COPROLOGS - TKP... | HOANG_LACI_hala... | All Bookmarks

IMEKO International Measurement Confederation

Technical Committee TC10 Measurement for Diagnostics, Optimization and Control

Navigation

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- Committees
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- Accommodation
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Venue

Venue of the 19th IMEKO TC10 Conference: "MACRO meets NANO in Measurement for Diagnostics, Optimization and Control" to be held in Delft, The Netherlands on September 21-22, 2023:

Hotel Arsenaal, Delft (Korte Geer 1, Delft) (https://hotelarsenaal.nl/)

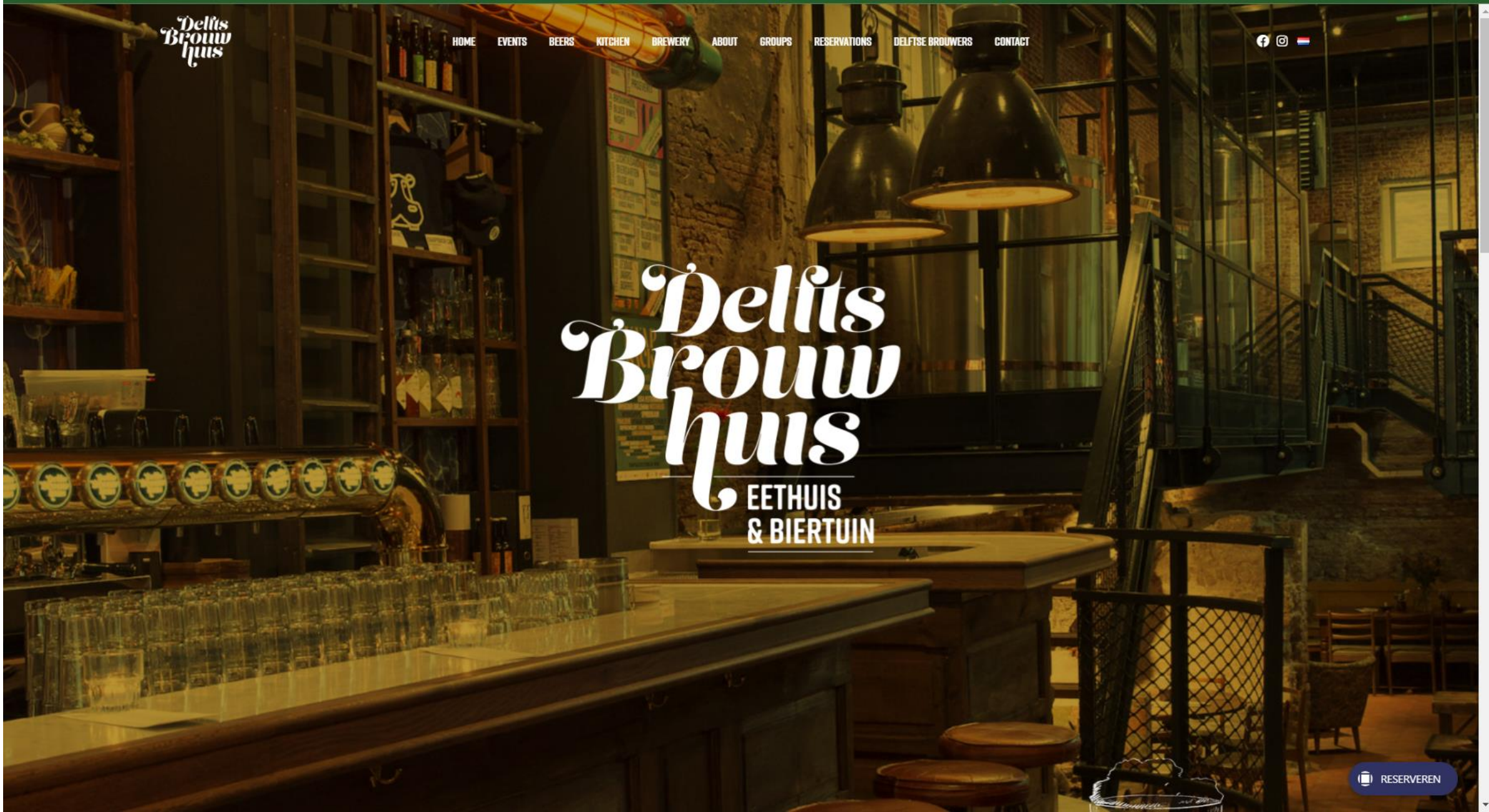
ONE OF DELFT'S ICONS

The Arsenaal is one of Delft's icons and an essential element of the townscape. The literally picturesque and 'Vermeerian' (Johannes Vermeer) complex has a high cultural/historical value. No wonder it's listed as a National Monument. Over the centuries, the buildings have had many functions, inhabitants, and visitors.

THE ROOM FOR OUR TC10 Conference is the Blue Room:

DREAM OF ADVENTURES UNDER THE HISTORIC BEAMED CEILING

Hotel Arsenaal Delft offers 63 hotel rooms, including two suites, superior rooms and comfort rooms. Every room breathes authenticity, reminding us of the rich history of the city of Delft. Thanks to the sixteenth century construction, all rooms have an authentic, unique and romantic character. The beds and facilities are similar in all rooms, but may vary in size and view. Hotel Arsenaal is a non-smoking hotel. It is therefore not allowed to smoke in the rooms.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Fájlok - SZTAKI Nex...
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HOANG_LACI_hala...
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RESERVATIONS
DELFTSE BROUWERS
CONTACT
Delfts Brouwhuis
EETHUIS
& BIERTUIN
RESERVEREN

SZTAKI

3 COURSES

APPETIZER BOARD

SOURDOUGH BREAD FROM MENEER LEFFERS WITH LEMON CHIVE BUTTER, PAIN D'ARDENNE,
WEISSWURST WITH BAVARIAN SWEET MUSTARD, LEBERKÄSE, VERMEER CHEESE,
SCHLOSSBERGER ALT KÄSE, BAVARIAN PRETZEL WITH OBATZDA AND PICKLES

MAIN COURSE | CHOICE FROM:

STEW WITH DELFT TRIPLE BEER

PORK NECK, SILVER ONIONS, MUSHROOMS AND CARROTS, FRIES AND A SMALL SALAD

FISH OF THE DAY*

ASK FOR THE CATCH OF THE DAY

FLAMMKUCHEN (V)

GARLIC CREAM, ROASTED BELL PEPPER, RED ONION, GREEN ASPARAGUS,
CHERRY TOMATO AND GRATED HARD CHEESE

BREWERS BURGER (ORGANIC)

TOMATO COMPOTE, BACON MAYONNAISE, CRISPY ONION RINGS, CHEDDAR CHEESE AND FRIES

Delfts Brouwhuis
EETHUIS & BIERTUIN

DESSERT | CHOICE FROM:

'CAFÉ GLACÉ'

VANILLA ICE CREAM WITH COFFEE SAUCE,
FRANGELICO SABAYON AND COFFEE CRUMBLE

RICE PUDDING

FOREST FRUIT COMPOTE AND
STRAWBERRY ICE CREAM

+ 2 drinks

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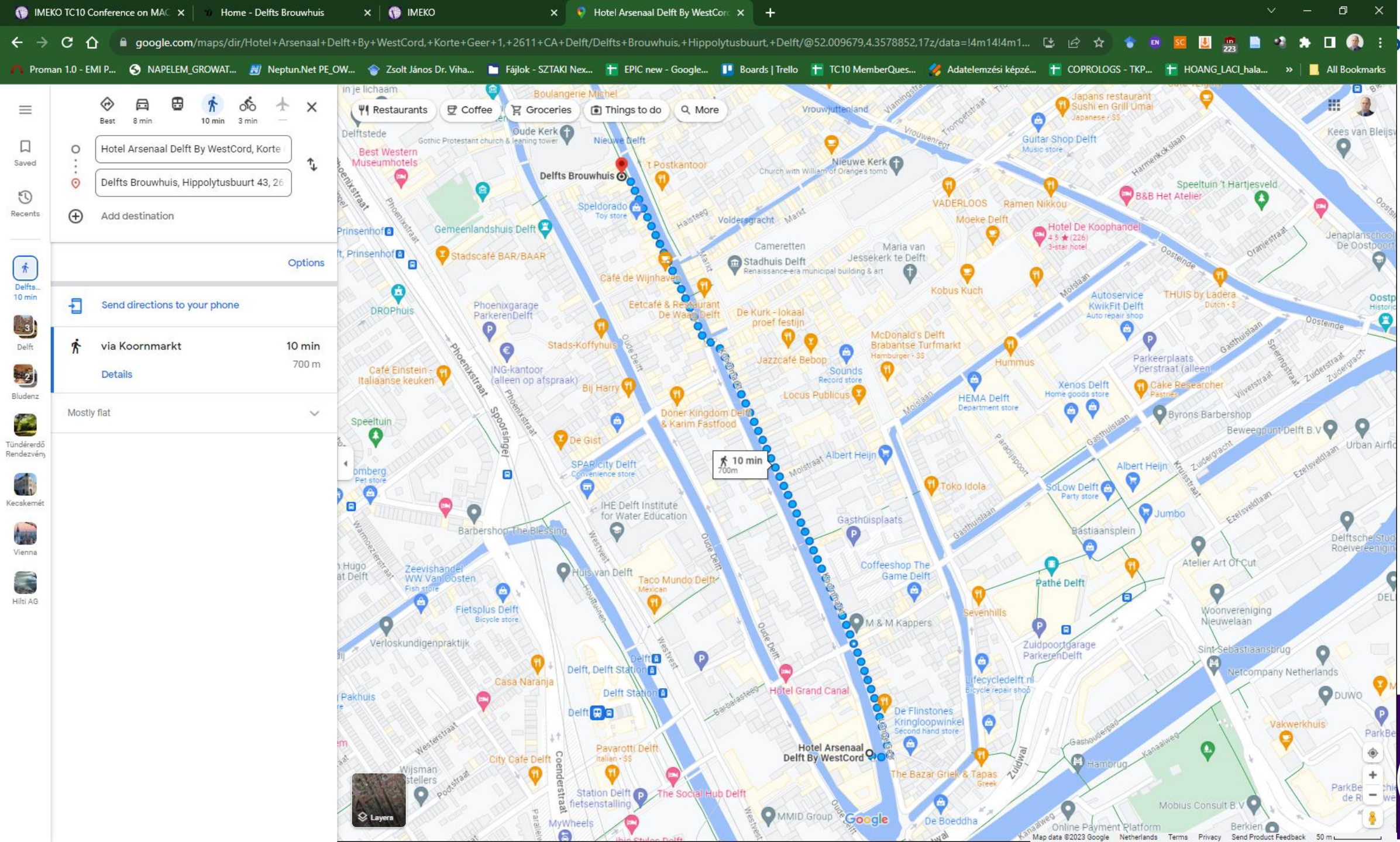

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Enjoy the scientific life inside our IMEKO TC10 on Measurement for Diagnostics, Optimization and Control

VSL National Metrology Institute

ZEISS Seeing beyond

PI

Contact:

Dr. Zsolt János Viharos

Senior research fellow, Institute for Computer Science and Control

Vice Dean for Science of the John von Neumann University

President of the Hungarian Member Organisation of IMEKO

Chairperson, IMEKO TC10 on Measurement for Diagnostics, Optimization and Control

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