



The 13<sup>th</sup> International Symposium on  
Measurement and Quality Control-ISMQC  
2<sup>nd</sup>-5<sup>th</sup> September 2025, Cluj-Napoca, Romania  
Quality and Accuracy in the Age of Data Driven Manufacturing



## ISMQC 2025 - Conference Program

**Venue:** Technical University of Cluj-Napoca HUB

**Location:** <https://maps.app.goo.gl/sh9FEGf25WLinRk36>

**Virtual Tour & Details:** <https://utcluj.digital/tur-virtual-3d-hub-utcn>

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### DAY 1 - Tuesday, September 2, 2025

**9:00 - 10:00** | Registration & Welcome Coffee

**10:00 - 11:30** | Opening Ceremony followed by KEYNOTE SPEECHES (2 keynotes: **Prof. Yasuhiro Takaya, Prof. Satoru Takahashi**)

**11:30 - 11:45** | Coffee Break

**11:45 - 13:30** | KEYNOTE SPEECHES (2 keynotes: **Prof. Stelian Brad, Prof. Ryoshu Furutani**)

**13:30 - 14:30** | Lunch Break

**14:30 - 16:00** | PARALLEL SESSIONS

**ROOM 301 - Session 1A, Chairs: Ryoshu Furutani and Stelian Brad**

**1. Ryoshu Furutani**

*Estimation method of kinematic parameters considering posture of articulated arm type coordinate measuring machine by machine learning*

**2. Adam Gąska, Wiktor Harmatys, Adam Wójtowicz, Piotr Gąska and Maciej Gruza**

*Virtual experiments for uncertainty evaluation of measurements performed using coordinate measuring machines*

**3. Stefan Bodi, Claudiu-Ioan Rusan, Radu Comes, Zsolt Levente Buna and Raul-Silviu Rozsos**

*Digitization accuracy in focus: A comparative analysis of CMM and 3D structured-light scanning technologies*

**4. Stelian Brad, Diana Ticudean, Bogdan Balog, Alexandru Cirlejan, Vasile-Dragoș Bartoș, Anca Stan and Ionuț Adrian Chiș**

*AI-augmented FMEA with anticipatory failure reasoning*

**5. Stelian Brad, Diana Ticudean, Vasile-Dragoș Bartos, Emilia Brad and Ionut-Adrian Chis**

*Evolutionary quality function deployment with integrated AI and system evolution planning for industry 5.0*



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**ROOM 302 - Session 1B, Chairs: Ágota Drégelyi-Kiss and Justyna Trojanowska**

1. **Áron Lóránd and Ágota Drégelyi-Kiss**  
*Determination of surface roughness measurement uncertainty in additively manufactured components*
2. **Razvan Mihai Craciun, Maxim Andrei-Vasile, Muresan Vlad, Eva Maria Walcher and Günther Poszvek**  
*Evaluation of dimensional precision in FDM 3D-printed parts via computed tomography*
3. **Patricia Gabriela Rakos and Ioana Maria Dan**  
*Integrated study of surface roughness parameters and dimensional accuracy in FDM 3D-printed parts*
4. **Jozef Husár, Justyna Trojanowska, Olha Kalman and Peter Lazorík**  
*Comparison of advanced camera vision systems for defect inspection of 3D print parts*
5. **Attila Marczis and Ágota Drégelyi-Kiss**  
*Evaluation of volumetric calibration for dimensional accuracy in X-ray and neutron computed tomography*

**16:00 - 16:30** | Coffee Break & Networking

**16:30 - 18:00** | PARALLEL SESSIONS

**ROOM 301 - Session 2A, Chairs: Chu-Shik Kang and Yasuhiro Takaya**

1. **Kei Kondo, Yasuhiro Mizutani, Shoma Kataoka, Tsutomu Uenohara and Yasuhiro Takaya**  
*Accuracy verification of 3D shape measurement by transport of intensity equation using single pixel imaging*
2. **Ching-Chia Yen, Feng-Tse Chan and Liang-Chia Chen**  
*Optical model-informed deep learning for enhanced surface profilometry in chromatic confocal microscopy*
3. **Chu-Shik Kang, Jae Yong Lee, Sunghoon Eom, Jong-Ahn Kim and Jae Heun Woo**  
*Uncertainty evaluation on linewidth measurement using an optical microscopic system calibrated by both a laser interferometer and a linewidth standard*
4. **Cosmin Nacu, Günther Poszvek and Friedrich Bleicher**  
*Microscopic fiducial markers for industrial metrology applications*
5. **Mihai Ciupan, Claudiu-Ioan Rusan and Cornel Ciupan**  
*Test bench for assessing the accuracy and synchronization of CNC axes*



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**ROOM 302 - Session 2B, Chairs: Stefan Bodi and Radu Comes**

1. **Radu Comes, Zsolt Levente Buna, Stefan Bodi and Grigore Marian Pop**  
*Evaluating the viability of photogrammetry as an alternative to structured light scanning in woodworking sculpture digitization*
2. **Alexandru Moldovan, David Chereches, Györk Attila Krasznai, Mircea Murar, Mircea Fulea, Grigore Pop and Bogdan Mocan**  
*Low-cost hybrid vision system for automated dimensional metrology: Machine learning-driven smartphone integration in robotic quality control applications*
3. **Claudiu-Ioan Rusan, Stefan Bodi, Mihai Ciupan and Claudiu Schonstein**  
*Establishing theoretical precision machining of a reconfigurable aluminium profile CNC router via finite element analysis*
4. **Adrian Popescu and Mircea Rusu**  
*Variation of mechanical and tribological characteristics of polymer parts reinforced with different types of fibers*
5. **Mircea Muntean and Vlad Bocanet**  
*Development of a deviation-driven framework for selective mesh correction in additive manufacturing*

**19:00 - 22:00** | Cocktail Dinner-Opus Society, location: <https://maps.app.goo.gl/2V8ijLHWtBbARU827>

**DAY 2 - Wednesday, September 3, 2025**

**8:30 - 9:30** | Morning Coffee & Networking

**9:30 – 12:00** | PARALLEL SESSIONS

**ROOM 301 - Session 3A, Chairs: Mihai Dragomir and Campean Emilia**

1. **Eva Maria Walcher, Günther Poszvek and Peter Stangl**  
*3D surface analysis of milling surfaces: Statistical evaluation and application of the Abbot curve*
2. **Zbigniew Humienny, Marcin Błaszczyk and Marek Jarzyna**  
*Concepts, principles and rules in the ISO GPS system – relations, coherences and incoherences*
3. **Campean Emilia, Moldovan Calin, Crisan Liviu Adrian and Adrian Constantin Popescu**  
*Predictive modeling for human error reduction in HV cable manufacturing: An ergonomic and process optimization perspective*
4. **Bogdan Balog, Stelian Brad, Vasile-Dragos Bartos, Emilia Brad and Diana Ticudean**  
*Optimizing cable clip placement with a Poka-Yoke approach for high-precision automotive assembly*
5. **Mihai Dragomir, Denisa Szabo, Diana Ilea and Diana Dragomir**  
*QM practices in the manufacturing sector under the green transition*

**ROOM 302 - Session 3B, Chairs: Günther Poszvek and Mihai Sorin Tripa**

1. **Vasile-Dragos Bartos, Grigore Pop, Stelian Brad, Diana Ticudean and Bogdan Gheorghe Balog**  
*Precision assessment and predictive compensation of ABB IRB 1600 robot using C-Track 780 Optical Tracking in smart manufacturing*
2. **Vasile-Dragos Bartos, Stelian Brad, Vladut Costan Trifan, Cirlejan Alexandru and Bodi Ștefan**  
*Comparative analysis of industrial and collaborative robot precision using optical metrology for smart manufacturing*
3. **Tomáš Broum, Miroslav Malaga, Pavel Raška, Jakub Müller and Michael Froněk**  
*Assessing collaborative robot reliability for color sorting under varying lighting conditions*



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4. **David Chereches, Alexandru Moldovan, Bogdan Mocan, Mircea Fulea and Mircea Murar**  
*Robotic inspection systems in data-driven manufacturing: Architectures, applications, and regional implementation insights from Romanian industry*
5. **Predrag Damićanin, Goran Damićanin and Vidosav Majstorović**  
*Towards smart manufacturing metrology in industry*
6. **Vidoje Kasalica and Slavenko Stojadinovic**  
*Virtual measurement system based on CMM and digital twin model*

**12:00 - 12:30** | Coffee Break-- Poster Session

1. **Lidia Smyczyńska**  
*The influence of the diameter measurement circle parameters on the results of the incomplete round profile test*
2. **Adam Gąska, Wiktor Harmatys, Piotr Gąska, Maciej Gruza, Jerzy Śladek, Karol Stroński, Dawid Kucharski, Tomasz Kowaluk and Krzysztof Stępień**  
*Simple uncertainty evaluation method for roughness parameters measurements based on use of Monte Carlo method*

**12:30 - 13:00** | Closing Ceremony

**13:00 - 14:00** | Lunch Break

**14:00 - 17:00** | Company Visits

**19:30 - 23:00** | Gala Dinner, Restaurant: Maimuța Plângătoare, location:  
<https://maps.app.goo.gl/cn7YgDGfSnTwPnTy7>

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**DAY 3 - Thursday, September 4, 2025- ROOM A123, AULA CENTENAR**

**IMEKO TC14 Meeting** followed by a Company Visit

location: <https://maps.app.goo.gl/FA9EEavhvaagJspB6>

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**DAY 4 - Friday, September 5, 2025**

**IMEKO TC14** - Faculty Tour (*No paper presentations*), Technical University of Cluj-Napoca - Faculty of Industrial Engineering, Robotics and Production Management ,Design Engineering Department

location: <https://maps.app.goo.gl/FA9EEavhvaagJspB6>

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