

# SMSI 2025

Sensor and Measurement  
Science International

6-8 May 2025  
Nuremberg, Germany



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## Call for Papers



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[www.smsi-conference.com](http://www.smsi-conference.com)



AMA Association for Sensors and Measurement

# SMSI 2025 - Call for Papers

Final submission date: 15 November 2024

## SMSI 2025

The Sensor and Measurement Science International Conference is the scientific part of SENSOR+TEST, the leading exhibition for sensors, measuring and testing technologies world-wide, where the experts from industry and academia meet to share the latest developments and innovations.

## Nuremberg live

Nuremberg offers a variety of attractive leisure locations. The city is charming a rich cultural heritage and a medieval architecture. The lovingly restored old town with its picturesque streets and historically impressive buildings invites visitors to take a stroll and relax in one of the numerous cafes.

## Tradition and innovation - the mix counts

The mix of old and living traditions of Nuremberg and of the open-minded people creates a particularly friendly atmosphere. In this city, one can combine business and pleasure in an enjoyable way.

## After-business pleasure

At the end of the day explore the Southern German lifestyle and enjoy the culinary offerings in the lovely old town quarter of Nuremberg. You can also use the evening to relax with the local wellness services.



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## Restaurants & nightlife

From Franconian grilled sausage to Japanese sushi train – Nuremberg offers culinary delights for every taste. Even more, you can go out for dancing in many nightclubs till dawn. Fancy a taste?

## Museums & exhibitions

Visit one or more of Nuremberg's 29 museums: from contemporary art to the High Middle Ages, from the Peace Museum to the New Museum for Art and Design, from the Germanic National Museum to the Museum of Industrial Culture.



## Music & events

Anyone staying in Nuremberg after the SMSI 2025 conference for the weekend can visit an event known as the "Blaue Nacht". Visitors are offered a program full of contemporary art and culture. The highlight is the colorful projection on the Kaiserburg. Or you can visit the music event "The Doors Alive" on Sunday.

## Local recreation areas

From Franconian Switzerland to the new Franconian Lakes - Nuremberg's surroundings offer numerous attractive recreation areas. Take a trip!

## More information available at:

[www.tourismus.nuernberg.de](http://www.tourismus.nuernberg.de)

[www.nuernberg.de](http://www.nuernberg.de) - Information about Nuremberg

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## Call for Papers

Welcome to the Sensor and Measurement Science International Conference SMSI 2025.

Join us in continuing the legacy of successful scientific conferences in the field of sensor and measurement technology in Nuremberg. For over three decades, the leading international trade fair SENSOR+TEST has served as stimulus by bringing together institutions and organizations from science, industry, research, and development to foster collaborative networks. This convergence has catalyzed the exchange of ideas and the execution of joint scientific projects.

We are excited to extend an invitation to the third Sensor and Measurement Science International (SMSI) conference, a culmination of the AMA's wealth of experience in conferences, symposia, and expert panels. This joint event promises international visibility, combining the expertise of diverse stakeholders. We warmly invite you to be part of this unique gathering.

With SMSI 2025, we are adopting a comprehensive approach to sensors and measurement science, structured within two distinct pillars, each with a precise scientific focus. These pillars are interlinked by a shared vision to advance and contribute to the ongoing digitalization. Our scientific program has undergone meticulous revision, incorporating topics from emerging and rapidly advancing technology areas. These include sensor materials and technology, sensing principles and devices, interface electronics, sensor systems and applications, as well as AI approaches in measurement science and advanced measurement methodologies for networked and IoT-related measurement systems.

We are uniting international experts from the fields of sensing and instrumentation, measurement science, and metrological infrastructure. Collaborating with partners from science, industry, as well as national and international research institutions, our goal is to establish the biennial SMSI conference series as one of the premier events in these pivotal fields of digitalization.

It is our distinct pleasure to invite you to the SMSI 2025. The conference will take place at the Nuremberg Exhibition Center from 6 to 8 May 2025. Several internationally renowned experts have already confirmed their participation, through delivering plenary talks or expressing their willingness to engage.

Submit your short paper by 15 November 2024,  
via <https://www.smsi-conference.com/submission-short-papers>.

We eagerly anticipate your involvement! \_\_\_\_\_



Prof. Dr. Ulrich Schmid  
Technische Universität Wien  
General Chair



Prof. Dr. Michael Heizmann  
Karlsruhe Institute of Technology (KIT)  
General Co-Chair

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**AMA Association for Sensors and Measurement - Linking Innovators** Network and Representative of Interest for the Sector for Sensor and Measurement Technology.

The AMA Association for Sensors and Measurement (AMA Verband für Sensorik und Messtechnik) with its 450 members is Europe's leading network for the key sector of sensor and measurement technology.

AMA is the first point of contact for all topics relating to sensors and measuring technology and offers an overview of sensors, measuring and testing technology with a clear focus on industrial relevance and applicability. The AMA Directory of Suppliers is an invaluable tool for application engineers seeking specific technology or know-how.

AMA publishes the Journal of Sensors and Sensor Systems (JSSS). It is an international open-access journal dedicated to science, application, and advancement of sensors and sensors as part of measurement systems. The emphasis is on sensor principles and phenomena, measuring systems, sensor technologies, and applications.

The association promotes the innovation dialog at the leading trade fair SENSOR+TEST, at joint stands of important leading trade fairs in Germany and abroad and at the scientific congress SMSI 2025.

<https://www.ama-sensorik.de/en/>



# SMSI 2025 - Call for Papers

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## SMSI Conference Committee

### General Chair

Ulrich Schmid

Technische Universität Wien (Austria)

### Sensors and Instrumentation

#### Topical Chairs

Camilla Baratto	University of Brescia (Italy)
Alexander Bergmann	Technische Universität Graz (Austria)
Stefan J. Rupitsch	Albert-Ludwigs-Universität Freiburg (Germany)
Sebastian Wood	National Physical Laboratory – NPL, Teddington (United Kingdom)

#### Members

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Domenico Balsamo	Newcastle University (United Kingdom)
Marco Jose da Silva	Johannes-Kepler-Universität Linz (Austria)
Michael Deilmann	KROHNE Messtechnik GmbH (Germany)
Péter Fürjes	Institute of Technical Physics and Material Science, Budapest (Hungary)
Gerald Gerlach	Technische Universität Dresden (Germany)
Jörg Gramich	Kistler Instrumente AG, Winterthur (Switzerland)
Bernhard Jakoby	Johannes-Kepler-Universität Linz (Austria)
Ulrich Kaiser	DHBW Lörrach (Germany)
Robert Kirchner	Technische Universität Dresden (Germany)
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Michael Kraft	University of Liege (Belgium)
Peter A. Lieberzeit	Universität Wien (Austria)
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Ralf Moos	Universität Bayreuth (Germany)
Calogero M. Oddo	Sant'Anna School of Advanced Studies, Pisa (Italy)
Daniel Platz	Technische Universität Wien (Austria)
Donatella Puglisi	University of Linköping (Sweden)
Leonhard M. Reindl	Albert-Ludwigs-Universität Freiburg (Germany)
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Jörg Schieferdecker	Heimann Sensor GmbH, Dresden (Germany)
Uwe Schnakenberg	RWTH Aachen (Germany)
Gabriele Schrag	Technische Universität München (Germany)
Andreas Schütze	Universität des Saarlandes, Saarbrücken (Germany)
Steve Semancik	National Institute of Standards and Technology – NIST, Gaithersburg (USA)
Ashwin A. Seshia	University of Cambridge (United Kingdom)
Eric Starke	SICK Engineering GmbH, Ottendorf-Okrilla (Germany)
Gerald A. Urban	Albert-Ludwigs-Universität Freiburg (Germany)
Michael J. Vellekoop	Universität Bremen (Germany)
Martin Walther	Fraunhofer-Institut für Angewandte Festkörperphysik (IAF), Freiburg (Germany)
Jürgen Wöllenstein	Fraunhofer-Institut für Physikalische Messtechnik (IPM), Freiburg (Germany)
Stefan Zimmermann	Leibniz Universität Hannover (Germany)
Jens Zosel	Kurt-Schwabe-Institut für Mess- und Sensortechnik e.V. Meinsberg, Waldheim (Germany)

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## General Co-Chair

**Michael Heizmann**      **Karlsruhe Institute of Technology (Germany)**

## Measurement Science and Metrology

### Topical Chairs

Matthias Bartholmai BAM Bundesanstalt für Materialforschung und -prüfung, Berlin (Germany)  
Eric Benoit Université Savoie Mont Blanc (France)  
Joao Alves Sousa Instituto Portugues da Qualidade, Caparica (Portugal)  
Jens Zosel Kurt-Schwabe-Institut für Mess- und Sensortechnik e.V. Meinsberg, Waldheim (Germany)

### Members

Cosimi Corleto STIL SAS, Aix-en-Provence (France)  
Faouzi Derbel HTWK Leipzig (Germany)  
Andreas Fischer Universität Bremen (Germany)  
Alistair Forbes National Physical Laboratory – NPL, Teddington (United Kingdom)  
Thomas Fröhlich Technische Universität Ilmenau (Germany)  
Craig Gulka NCSL International Inc., Boulder (USA)  
Emil Hazarian California State University Dominguez Hills, Carson (USA)  
Jay H. Hendricks National Institute of Standards and Technology – NIST, Gaithersburg (USA)  
Bernd Henning Universität Paderborn (Germany)  
Beat Jeckelmann Eidgenössisches Institut für Metrologie METAS, Bern-Wabern (Switzerland)  
Wang Jian National Institute of Metrology (NIM), Beijing (China)  
Raghu N. Kacker National Institute of Standards and Technology – NIST, Gaithersburg (USA)  
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Eberhard Manske Technische Universität Ilmenau (Germany)  
Michael Melzer BAM Bundesanstalt für Materialforschung und -prüfung, Berlin (Germany)  
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Andreas Schütze Universität des Saarlandes, Saarbrücken (Germany)  
Janusz Smulko Gdansk University of Technology (Poland)  
Carlo Tiebe BAM Bundesanstalt für Materialforschung und -prüfung, Berlin (Germany)  
Rainer Tutsch Technische Universität Braunschweig (Germany)  
Joaquin Valdés Universidad Nacional de San Martin, Ciudad de Buenos Aires (Argentina)

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## Collaborating Institutions and Organizations

- AHMT - German Working Group of Professors in Measurement Technology
- BAM - Federal Institute for Materials Research and Testing (Germany)
- BIPM - Bureau International de Poids and Mesures (France)
- CETIAT - Centre Technique des Industries Aèrauliques et Thermiques (France)
- COOMET - Euro-Asian Cooperation of National Metrological Institutions
- EURAMET - The European Association of National Metrology Institutes
- METAS - Federal Institute of Metrology (Switzerland)
- GMA - Society for Measurement and Automatic Control (Germany)
- IMEKO - International Measurement Federation (Hungary)
- INTI - Instituto Nacional de Tecnología Industrial (Argentina)
- Italian National Agency for New Technologies, Energy and Sustainable Economic Development (Italy)
- MSC - Measurement Science Conference (USA)
- NCSLI - National Conference of Standard Laboratories International (USA)
- NIST - National Institute of Standards and Technology (USA)
- PTB - Physikalisch-Technische Bundesanstalt (Germany)
- RISE - The Swedish Research Institute (Sweden)

Supporting Institutions:





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# Journal of Sensors and Sensor Systems

An open-access journal

## **Publish your extended conference paper in JSSS**

Authors of papers presented at the SMSI Conference will be offered the opportunity to publish an extended paper (max. 8 pages) in the open-access Journal of Sensors and Sensor Systems (JSSS) at a special rate.



**AMA**

Association for Sensors + Measurement

[www.journal-of-sensors-and-sensor-systems.net](http://www.journal-of-sensors-and-sensor-systems.net)

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## Sensors and Instrumentation

### A Sensor materials and technology

- A.1 Advanced functional materials
- A.2 Micro- and nanoscaled material properties
- A.3 1D and 2D materials
- A.4 Organic and flexible materials
- A.5 MEMS/NEMS technologies
- A.6 Heterogeneous integration
- A.7 Printing and additive manufacturing
- A.8 Modelling and simulation
- A.9 Robustness and aging phenomena
- A.10 Reliability

### B Sensor principles and devices

- B.1 Physical sensors
- B.2 Chemical sensors
- B.3 IR detectors
- B.4 Micro-optical devices
- B.5 Bio-sensors
- B.6 Medical sensors
- B.7 Quantum sensors
- B.8 Flexible and wearable sensors
- B.9 Advanced packaging and device encapsulation
- B.10 Integrated sensors
- B.11 Micro- and nanosystems
- B.12 Modelling and simulation
- B.13 (Accelerated) aging and reliability

### C Sensor interface electronics

- C.1 Readout circuits
- C.2 Signal conditioning and processing
- C.3 Conversion and digitization
- C.4 Low power electronics
- C.5 Ultra-precise interface electronics
- C.6 Stability under harsh environments
- C.7 Embedded systems

### D Sensor systems

- D.1 (Micro) hybrid integration
- D.2 Energy harvesting
- D.3 Energy storage
- D.4 Wireless communication and energy transfer
- D.5 Modelling and simulation of sensor systems
- D.6 Sensor and actuator systems
- D.7 Ultra-low and zero power sensors
- D.8 Packaging technologies
- D.9 Reliability and aging phenomena

### X Applications

- X.1 Industrial process technology
- X.2 Industrial manufacturing technology
- X.3 Consumer electronics, white goods
- X.4 Robotics
- X.5 Energy technology
- X.6 Environmental monitoring, climate change
- X.7 Mobility
- X.8 Safety and security
- X.9 Health
- X.10 Smart living, smart homes
- X.11 IoT



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## Measurement Science and Metrology

### **E Measurement foundations**

- |     |   |     |  |
|-----|---|-----|--|
| E.1 | Modelling and simulation of measurement processes       | E.4 | Evaluation of measurement uncertainty                    |
| E.2 | Signal processing, data analysis and information fusion | E.5 | Measurement and evaluation of nonquantitative properties |
| E.3 | Dynamic quantities and state estimation                 | E.6 | Revised SI and its opportunities                         |

### **F Metrology in the digital age**

- |     |                                    |     |  |
|-----|------------------------------------|-----|--|
| F.1 | Novel traceability schemes         | F.4 | New regulations and standards                        |
| F.2 | Future metrological infrastructure | F.5 | Risk analysis in metrology and conformity assessment |
| F.3 | Technology and knowledge transfer  | F.6 | Accreditations and proof of competence               |

### **G Networked and IoT-related measurement systems**

- G.1 Sensor networks: modelling, calibration, synchronization
- G.2 Smart sensors, self-X strategies
- G.3 Autonomous measurement systems

### **H Advanced measurement approaches**

- H.1 Quantum-based measurements, one-step-traceability solutions
- H.2 Numerical simulation approaches
- H.3 Virtual systems and digital twins

### **I AI approaches in measurement science**

- |     |   |     |   |
|-----|---|-----|---|
| I.1 | Data-driven modelling approaches            | I.3 | Quality assessment of data-driven and cognitive systems |
| I.2 | Measurement systems with cognitive features | I.4 | Explainable AI in measurement systems                   |

### **X Applications**

- |     |  |      |                           |
|-----|--|------|---------------------------|
| X.1 | Industrial process technology            | X.7  | Mobility                  |
| X.2 | Industrial manufacturing technology      | X.8  | Safety and security       |
| X.3 | Consumer electronics, white goods        | X.9  | Health                    |
| X.4 | Robotics                                 | X.10 | Smart living, smart homes |
| X.5 | Energy technology                        | X.11 | IoT                       |
| X.6 | Environmental monitoring, climate change |      |                           |



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## Supplementary activities



### Science Slam Apply now

Take part in this relaxed form of scientific communication and get a free ticket for the SMSI conference. (worth 740 Euros).

Participation information at:  
<https://www.smsi-conference.com/science-slam>

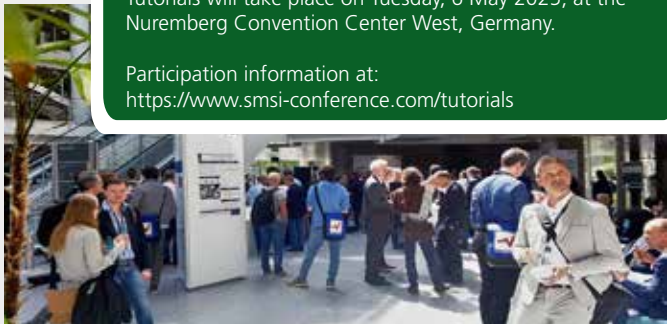


### Tutorials Get an introduction to current research topics in sensor and measurement science.

The SMSI Conference Committee invites experts to submit high-level proposals.

Tutorials will take place on Tuesday, 6 May 2025, at the Nuremberg Convention Center West, Germany.

Participation information at:  
<https://www.smsi-conference.com/tutorials>



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## Supplementary activities

### Job Lounge

Job Lounge is a modern platform for connecting with skilled professionals and motivated young talents. This gives all companies the opportunity to present themselves and attract the best minds. In addition, the exchange between experts promotes new ideas and innovations.



### Conference Dinner

Experience the traditional German cuisine during the Bavarian Conference Dinner while enjoying live music performed by a traditional Bavarian band. It's the perfect exchange platform in an authentic atmosphere with more than 200 conference participants.



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## Submission of Short Papers

Interested authors are kindly requested to submit a Short Paper (as PDF file) of their work for oral or poster presentation by 15 November 2024 at <https://www.smsi-conference.com/submission-short-papers>. All Short Papers will undergo a peer-review procedure.

## Deadlines

Short Paper (2-pages) submission:

**15 November 2024**

Notification of authors:

**15 February 2025**

## Short Papers and Proceedings

- Only Short Papers using the official template (available on <https://www.smsi-conference.com/smsi2025-template>) will be accepted.
- Maximum length of Short Paper: 2 pages
- Accepted Short Papers **will be transferred to the proceedings directly!** Authors do not need to submit separate papers for the proceedings.
- Accepted Short Papers will receive a DOI (Digital Object Identifier) number and will be published at [www.ama-science.org](http://www.ama-science.org).
- Presenting authors must **register for the conference and pay the conference fee by 14 March 2025 the latest**. Otherwise, even accepted Short Papers will not be included in the proceedings.
- A maximum of two Short Papers by each registered author will be accepted, regardless of the type of presentation.

Please note: Submission of a Short Paper implies the intent of at least one author to register, to attend the conference and to present the paper or poster as scheduled.

## Best Paper Awards

The SMSI Conference Committee will award the

- Best Paper Award
- Best Poster Award and
- Best Young Scientists Award (up to the age of 35 years)  
at the farewell reception on the last day of the conference



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## Lecture Sessions

20 minutes are allocated for each presentation (incl. 5 minutes for discussion). The presentation language is English.

## Poster Session

Authors of the Poster Session are requested to prepare a poster in English (90 cm width x 120 cm height) and to bring it along to the conference.

## Supplementary activities

### Tutorials

Experts in the field of metrology regulations, advanced measurement science and highly specialized sensors for instrumentation are invited to submit proposals for tutorials, preferably addressing PhD students and industrial representatives.

### Science Slam Session

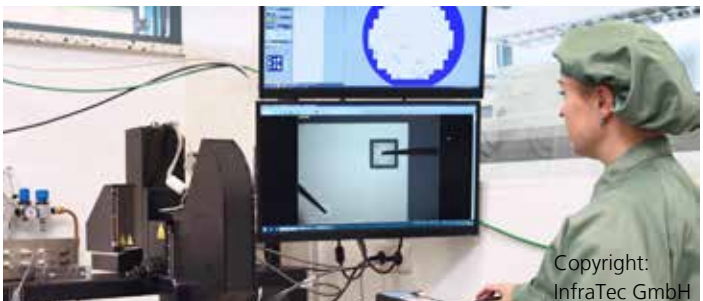
Interested scientists even without an accepted presentation or poster can submit a Science Slam proposal and participate in the Science Slam session. Contact the organizing team early at [contact@smsi-conference.com](mailto:contact@smsi-conference.com)

### Registration fees for authors

Author fee	740 Euros incl. VAT
Author fee for PhD students:	660 Euros incl. VAT
Author fee for graduate students:	575 Euros incl. VAT

The registration fee for authors includes:

- Participation in the SMSI 2025 Conference all days except Tutorials
- Proceedings
- SENSOR+TEST 2025 exhibition guide
- Admission to the SENSOR+TEST exhibition
- Refreshments
- Welcome reception on 6 May 2025
- Conference Dinner
- Reduced rate for publication of an extended paper in the open-access JSSS - Journal of Sensors and Sensor Systems.



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Welcome to the

# Innovation Dialog!



## SENSOR+TEST

DIE MESSTECHNIK-MESSE  
The Measurement Fair

**Nuremberg, Germany**  
**6–8 May 2025**

### **Efficient and personal:**

Highly concentrated information and broad consultation by international experts

### **Based on scientific facts:**

International conferences and meetings provide insights into tomorrow's technology

### **From sensing to evaluation:**

Measuring, testing, and monitoring solutions to enable innovation in all industries



#### **Host**

AMA Verband für Sensorik und Messtechnik e.V.  
Sophie-Charlotten-Str. 15  
14059 Berlin / Germany  
[www.ama-sensorik.de](http://www.ama-sensorik.de)



#### **Organizer**

AMA Service GmbH  
Von-Münchhausen-Str. 49  
31515 Wunstorf / Germany