

# Newsletter I

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**EUROPEAN  
PARTNERSHIP**



**Co-funded by  
the European Union**

The project has received funding from the European Partnership on Metrology, co-financed from the European Union's Horizon Europe Research and Innovation Programme and by the Participating States.

**METROLOGY  
PARTNERSHIP**



## Welcome

We are delighted to welcome you to the first newsletter of the MFMET II project “Establishing metrology standards in microfluidic devices II”.

We are very grateful for the opportunity to engage with potential users of the knowledge generated and disseminated by this project, and we will endeavour to provide regular updates on news and events of interest.

Following the successful completion of the initial MFMET project in summer 2024, this follow-on project, MFMET II, will address many new ideas, problems, and questions. The overall objective of the project is to advance metrology research for standardisation in the biomedical, pharmaceutical, and chemical industries, with a focus on microfluidics. The project will develop protocols and guidelines for microfluidic devices, including Organ-on-Chip (OoC) technology. These protocols will target the measurement of various quantities (e.g. flow, pressure and volume), easier system integration, the determination of material compatibility, improved quality control and device qualification. Some of these protocols will be developed using a new integrated microfluidic transfer standard. The outcomes of this project will directly benefit the work of ISO/TC 48/WG 3 and other relevant ISO and CEN committees.

The project is funded by the European Partnership on Metrology (EPM). It brings together partners from National Metrology Institutes (NMIs), industry and academia to create innovative solutions to identified drug metrology challenges that can be exploited in Europe and around the world.

We hope you find the newsletter valuable. We look forward to keeping in contact with you as stakeholders, users or interested parties, and to welcoming you to our project community.

Elsa Batista

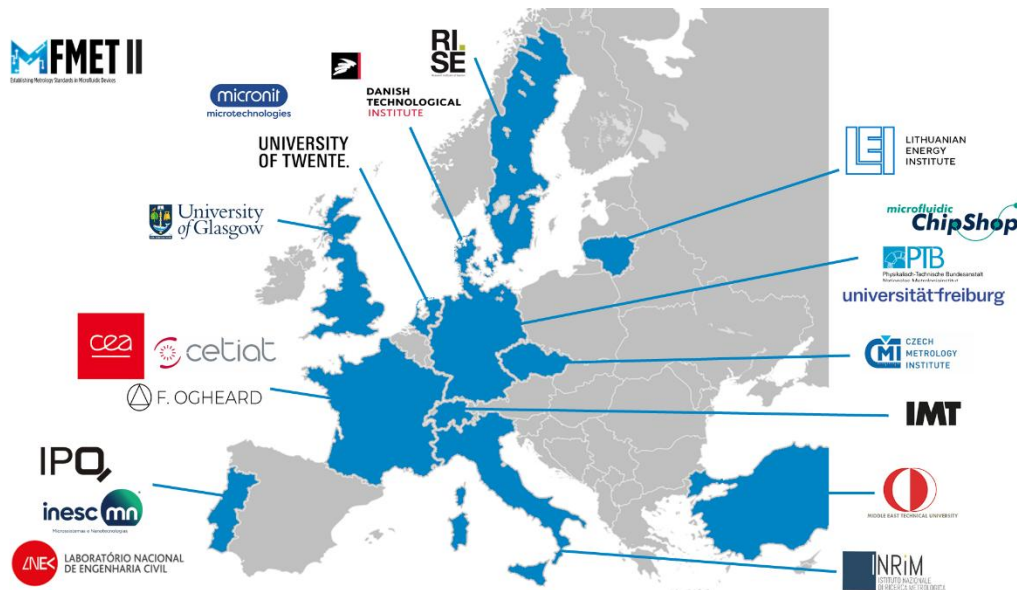
Coordinator of MFMET II Project

## News and facts

- The MFMET II project was launched on 1 June 2025 and will run for 36 months. It received an investment of €1.3 million from the EPM programme. The full title of this European project is “Establishing metrology standards in microfluidic devices II”.
- The first meeting of the project consortium took place in a hybrid format at RISE in Borås, Sweden, from 17 to 18 June 2026, with 30 participants.



- The consortium comprises 19 partners from 12 countries, including: 9 National and Designated Metrology Institutes, 4 companies, and 6 research institutions/universities.



- We have the support of 30 stakeholders, with the Microfluidic Association as our chief stakeholder.
- The MFMET advisory board comprises the following members: Darwin Reyes (NIST); Hiroki Nakae (JMAC); Bertrand Cinquin (ESPCI); Julia Sepulveda (MIC); Rui Martins (FCT-UNL); Mariëlle Wouters (MaterialsXpertise); Auke Kronemeijer (TNO); Nan Zhang (UCD); Alexis Tzannis (HSEAG); John Crabtree (HJC consulting); Hugo Bissig (METAS).
- The website of MFMET is [www.mfmet.eu](http://www.mfmet.eu).
- A new online discussion group for MFMETII is available on LinkedIn: <https://www.linkedin.com/groups/10143323/>

## Highlights from the work packages

The project is divided into four technical work packages, each with a specific objective:

1. To establish standard procedures to metrologically-assess and characterise particle-laden flows in terms of flow-related quantities (e.g., velocity, particle counting and shear stress in the presence of droplets, bubbles, particles, cells), pressure drop, flow resistance, dead volume and total volume in microfluidic devices, including Organ-on-Chip. (WP1)
2. To develop a technical guide for the integration of sensors, actuators and fluidic components in microfluidic devices using scalable, cost-effective and sustainable manufacturing strategies (e.g., biodegradable materials) and supporting steps of sterilisation (for Organ-on-Chip), characterisation of the interface between material and medium (absorption, adsorption, biocompatibility coating quality: homogeneity, durability, and surface wettability modification efficiency) and preventing contamination as well as a guideline on the integration of different materials and how that integration changes material shape (e.g. material deformation due to environmental factors (heat, electricity or pressure) from manufacturing processes). (WP2)
3. To define guidelines for quality control, validation, and characterisation regarding microfluidic devices reliability/failure with focus on hydrostatic vs pneumatic testing: leakage (using liquids and gases at elevated temperatures and different mediums), burst pressure, bonding strength, connector reliability and general safety precautions. (WP3)
4. To develop and characterise at least 1 new setup of an integrated microfluidic system with several sensors and actuators to access the influence of different quantities in the system performance in order to qualify and validate it. This microfluidic system will act as a metrological transfer standard. (WP4)

## Dissemination of work

Several partners participated in the MPS 2025 conference, which was held in Brussels from 9 to 13 June 2025. The results of the MFMET project and the new MFMET II project were presented, and the poster is available on our website.

The project was also presented to ISO TC276/SC2/WG1, EURAMET TC-F 2025 and EURAMET TC-M 2025.

Our first publishable summary can now be found on our website.

The project published a paper entitled “Advancing Calibration Techniques for Accurate Micro and Nanoflow Measurements” in the Frontiers journal Nanotechnology, which has been available since 11 June 2025 as part of the Research Topic “Women in Nanotechnology: Volume II”. The paper can be found [here](#).

## How to contact us

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