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1 INTRODUCTION

This “Report on National and International Events – 2” documents activities delivered under OrChESTRA between M25–M36 (1 September 2024–31 August 2025). It updates and complements the first report (M1–M24), following the same structure—national outreach and stakeholder engagements, joint attendance at conferences, and partner-led international events—while focusing on the period’s objectives, delivery and immediate outcomes.

Events in this period were used to disseminate results, enable peer-to-peer collaboration, and broaden the project’s network in microfluidics and organ-on-chip. For each item, the report summarises purpose, preparation, execution format (in-person, hybrid or online), participation, and evidence (programmes, agendas and links), with short notes on next steps arising from the engagement.

2 NATIONAL EVENTS

Within the scope of national events and collaborative activities, ODTÜ MEMS maintained a proactive outreach to expand its presence in the regional ecosystem for microfluidics and organ-on-chip. This approach aligns with OrChESTRA’s strategy and draws on partners’ experience. A structured market landscaping exercise continued to map stakeholders across the organ-on-chip value chain—healthcare, microfluidics, biotechnology, pharmaceuticals, diagnostics, materials, instrumentation and contract research—identifying contact points for follow-up.

A go-to-industry approach was applied to engage these stakeholders: personalised introductions, participation in domestic industry environments and events, and face-to-face meetings hosted at ODTÜ MEMS or on partner premises. Face-to-face meetings were used as working sessions to scope use cases, review standards/regulatory considerations, and outline potential funding routes (national and international schemes), providing immediate feedback loops and clearer next steps.

During M25-M36, over 70 face-to-face meetings were held with national business, public and research organisations, including 11 meetings with international entities. The distribution to date is as follows:

- **Business organisations:** 31 meetings (industry collaboration and application scoping)
- **Public organisations:** 17 meetings (policy/regulatory alignment and public-interest use cases)
- **Research institutions:** 12 meetings (knowledge exchange and joint initiative scoping)
- **International organisations:** 11 meetings (network extension and access to complementary expertise)

These interactions contributed to a more connected national landscape for organ-on-chip, supporting pipeline development and peer-to-peer collaboration. Figure 1 presents selected images from face-to-face engagements conducted under OrChESTRA.



(a)



(b)



(c)

Figure 1: (a) ODTÜ MEMS representatives' visit to Ankara Regional Forensic Police Laboratory Directorate (b) Representatives from Netherlands Innovation Network Türkiye visit to ODTÜ MEMS (c) Meeting with Ankara Development Agency representatives.

Student-focused visits continued to be used to build early awareness and interest in organ-on-chip and microfluidics. Each session combined short presentations with a guided cleanroom tour. Student Days organised during M25–M36:

- **October 21, 2024:** Mechanical engineering students from Ankara Yıldırım Beyazıt University visited ODTÜ MEMS for an introductory briefing, followed by a guided cleanroom tour, with 18 students participating.
- **January 3, 2025:** Students from METU's Mechanical Engineering and Electrical & Electronics Engineering departments attended presentations on MEMS technologies and toured the cleanroom, with 26 students participating.
- **February 2, 2025:** Students from Nermin Mehmet Çekiç Anadolu Lisesi were hosted for an introduction to microsystems and a facility walkthrough including the cleanroom, with 36 students participating.
- **March 18, 2025:** METU Mechanical Engineering students visited ODTÜ MEMS for a short briefing on microfluidics/BioMEMS and a cleanroom tour, with 18 students participating.
- **April 14, 2025:** Students from GOP Mesleki ve Teknik Anadolu Lisesi attended an introductory session and cleanroom tour at ODTÜ MEMS, with 21 students participating.



Figure 2: Yıldırım Beyazıt University students' visit to ODTÜ MEMS.



Figure 3: METU Mechanical Engineering and Electrical and Electronics Engineering students' visit.

Face-to-face meetings and Student Days provided a steady channel for outreach and peer-to-peer exchange throughout the period. Although OrChESTRA concluded on **31 August 2025**, these formats have been retained at ODTÜ MEMS as routine practice. The interactions have generated collaboration leads, informed proposal scoping, supported knowledge transfer across the local ecosystem, and sustained student interest in organ-on-chip and microfluidics. The Centre's visibility and partner network have continued to broaden, with follow-ups and working contacts carried into the subsequent period. The next section presents the international events and outcomes.

Other National Visibility Events

During the period, ODTÜ MEMS also participated in high-profile national events that contributed to the project's visibility and networking objectives.

- **TEKNOFEST** (KKTC, 1–4 May 2025): ODTÜ MEMS hosted a stand presenting ongoing research lines and demonstrators relevant to microdevices and organ-on-chip. The event enabled broad public outreach and informal discussions with potential stakeholders and students.
- **ICTürkiye 2025** (Ankara, 10 April 2025): Participation in the national brokerage event facilitated short bilateral meetings with industry and academia regarding Horizon Europe opportunities. OrChESTRA materials were used in conversations to describe capabilities and collaboration areas.

These complementary activities broadened the audience reached by OrChESTRA dissemination, strengthened ODTÜ MEMS's national profile, and generated contacts that are being followed up through regular coordination channels.

3 INTERNATIONAL EVENTS

In M25–M36, international activity focused on two strands: (i) attendance at major conferences to engage with peers and follow state-of-the-art developments, and (ii) OrChESTRA-organised international events to convene stakeholders around organ-on-chip and microfluidics. During this period, relevant international conferences aligned with the project's themes were attended. In addition, the consortium organised the OrChESTRA Summer School 2024, the 4th International BioMEMS and Microfluidic Technologies Workshop (İzmir), and two brokerage events (Ankara and Freiburg), and participated in a Horizon Europe synergy workshop in Rome.

3.1 Joint Attendance at Conferences

Joint attendance at international conferences continued to serve as a practical channel for visibility, peer exchange and alignment with emerging themes in microfluidics, biosensing and organ-on-chip. Participation focused on following state-of-the-art developments, engaging with prospective collaborators and, where appropriate, presenting work aligned with OrChESTRA objectives.

- **µTas 2024 (The 28th International Conference on Miniaturized Systems for Chemistry and Life Sciences)**

Date: October 13-17, 2024

Location: Montreal, Canada

OrChESTRA partners were present from ODTÜ MEMS (Dr. H. Cumhur Tekin) and IMEC (Dr. Dries Braeken). Attendance is recorded as parallel participation (conference presence and informal exchanges). At this stage, no co-authored abstract or joint presentation has been identified. The aim was to follow current advances, meet peers, and note potential themes and calls for future collaboration.

- **Biosensors 2025**

Date: May 19-22, 2025

Location: Lisbon, Portugal

ODTÜ MEMS researchers (Mehmet Oğulcan Güngör, Ayşen Gümüştas, Ali Can Atik, Leman Dicle Balcı) and former UFR researcher Can Dinçer attended Biosensors 2025 to follow advances in electrochemical/optical biosensing, lab-on-chip integration, and translational diagnostics, and to exchange on organ-on-chip–sensor interfaces relevant to OrChESTRA. Attendance was used to (i) track emerging methods and materials; (ii) meet prospective collaborators across academia/SMEs; and (iii) scope alignment with upcoming Horizon Europe calls.

Oral presentation:

ODTÜ MEMS was represented by Mehmet Oğulcan Güngör, who delivered an oral presentation titled **“Microfluidics Made Simple: A Low-Cost, High-Performance Biosensor Platform Using SPEs, MIPs, and Rapid Injection Molding.”** The talk introduced a dual-channel microfluidic platform that integrates screen-printed electrodes (SPEs) and molecularly imprinted polymers (MIPs) for selective L-Dopa detection, and outlined rapid, scalable fabrication routes—3D-printed molds, rapid injection molding, and thermoforming—aimed at reducing cost while maintaining performance. Attendance provided visibility within the biosensing

and microfluidics community, enabled technical feedback on the platform, and supported networking for potential collaboration and follow-up work.

Abstract: Early and accurate detection of Parkinson's disease is critical for improving patient outcomes and advancing treatment strategies. However, the need for affordable and sensitive diagnostic solutions remains a challenge. This study presents a novel biosensor platform that combines screen-printed electrodes (SPEs), molecularly imprinted polymers (MIPs), and rapid injection molding to create a cost-effective yet high-performance solution for biomarker detection. Levodopa-imprinted MIPs serve as the recognition layer, while SPEs are incorporated into 3D-printed injection-molded microfluidic cartridges. The platform's unique dual-cartridge design enhances functionality and performance: one cartridge facilitates selective surface modifications by confining them to the carbon working electrode, while the other exposes all electrodes for electrochemical measurements. In conventional microfluidic systems, modifications are often applied indiscriminately across all electrodes, potentially compromising overall performance. The proposed system further enables the use of SPEs with Ag/AgCl reference electrodes, addressing the stability issues associated with Ag electrodes. Additionally, the continuous flow provided by the microfluidic system ensures consistent analyte delivery, improving molecular distribution and increasing the likelihood of binding events¹. Unlike static drop-based methods, where interactions rely solely on slow diffusion, microfluidics allows precise control over flow rates and reduces steric hindrance and "dead zones," optimizing binding kinetics and specificity². This controlled environment minimizes non-specific binding, enhances the signal-to-noise ratio, and significantly improves sensitivity and reproducibility³. For the electrochemical validation of the system, differential pulse voltammetry and electrochemical impedance spectroscopy were conducted. This platform, therefore, combines advanced features that enhance binding efficiency, stability, and scalability. Specifically designed for levodopa detection, the system offers a high-performance, reliable solution to advance Parkinson's disease diagnostics and biomolecule detection across a wide range of clinical applications.

Poster presentations:

- Gumustas, A., Torul, H., Ozkan Hukum, K., Tamer, U., Yildirim, E. '**Conducting Polymer Based Amperometric Sensor for the Determination of Lactate Dehydrogenase**'. 35th Anniversary World Congress on Biosensors, 19-22 May 2025, Lisbon, Portugal.

Abstract: Lactate dehydrogenase (LDH) is a key enzyme in the glycolytic pathway and plays a pivotal role in the medical field as a biomarker for cancer. Its elevated activity in cancer cells results in increased lactate production, a phenomenon commonly observed in cancer patients, and which is correlated with clinical outcomes and treatment decisions^{4,5}. In addition to its use as a biomarker for cancer, LDH is employed as a biomarker for other diseases, including malaria. Consequently, there is a pressing need

¹ Çağlayan Arslan et al. *Microchim. Acta* 2024, 191 (229).

² Shanko et al. *ACS Sens.* **2021**, 6 (7), 2553–2562.

³ Ramanavicius et al. *Polymers* 2021, 13 (6), 974

⁴ Y. Zhou, et al, Current Status and Future Perspectives of Lactate Dehydrogenase Detection and Medical Implications: A Review, *Biosensors* 12 (2022).

⁵ S. Su, et al., Prognostic significance of serum lactate dehydrogenase in patients undergoing radical cystectomy for bladder cancer, *Urologic Oncology: Seminars and Original Investigations* 38 (2020) 852.e1-852.e9. <https://doi.org/10.1016/j.urolonc.2020.05.031>.

to develop sensitive and convenient methods for LDH detection^{6,7}. The objective of this study was to propose an amperometric sensor for the detection of LDH. In order to achieve this objective, screen-printed gold electrodes were utilized and subsequently modified. Polyaniline-b-poly acrylic acid (PANI-b-PAA), synthesized via the reversible addition fragmentation chain transfer method, was employed for the modification. A volume of 5 µL of the PANI-b-PAA solution was applied to the working electrode by drop-casting and allowed to dry at 37°C. The modified SPGEs were then stored at 4°C. To perform the amperometric measurement of LDH, 0.1 M of KCl, 0.0025 M of NAD (prepared in 0.1 M PBS pH 7.4) and 0.010 M of lactate (prepared in 0.1 M PBS pH 7.4) were dropped onto the working electrode respectively. The enzymatic reaction was then initiated by the addition of 5.0 µL of different concentrations of LDH solutions, with an operating potential of + 0.7 V applied for 150 s. The change in current with time, due to the production of NADH was recorded. A linear relationship between varying LDH concentrations and current was observed in the range of 75 U/L to 400 U/L, with a limit of detection (LOD) at 25 U/L. The corresponding linear equation was $y = 0.0004x + 0.1134$ with a correlation coefficient (R²) of 0.9836.

- Torul, H., Gumustas, A., Tamer, U., Yildirim, E. 'Enhanced Electrochemical Biosensor for Sensitive NADH Detection'. 35th Anniversary World Congress on Biosensors, 19-22 May 2025, Lisbon, Portugal.

Abstract: Nicotinamide adenine dinucleotide (NADH) is an essential coenzyme that plays a crucial role in cellular metabolism, redox balance, and energy production. Detecting NADH levels is important for monitoring metabolic disorders, oxidative stress, and the progression of diseases such as cancer and neurodegenerative conditions^{8,9}. Changes in NADH levels serve as key biomarkers for evaluating mitochondrial function and enzymatic activity, which makes its quantification vital in clinical diagnostics and biomedical research¹⁰. Developing rapid, sensitive, and cost-effective methods for NADH detection can improve disease diagnosis, therapeutic monitoring, and the analysis of biochemical pathways¹¹. Gold screen-printed electrodes (Au-SPE) were modified using a two-step process to enhance NADH detection sensitivity. Initially, nitrogen-doped reduced graphene oxide (NRGO) was dispersed in a mixture of ethanol and deionized water and sonicated for uniform dispersion. A certain volume of the NRGO suspension was dropped-cast onto the Au-SPE surface and allowed to dry at 60°C, ensuring uniform coverage. After drying, the electrodes were subjected to electrochemical polymerization of Meldola's Blue (MdB) to facilitate electron transfer between NADH and the electrode surface, reducing the overpotential required for NADH oxidation and reducing interference from other electroactive species. The modified electrodes were then rinsed with deionized water to remove unbound material and stored in a dry environment until usage. To evaluate the performance of the developed sensor in NADH detection, amperometric measurements were conducted at an operating potential of +0.45 V for 150 s.

⁶ X.E. Cao, J. Kim, S. Mehta, D. Erickson, Two-Color Duplex Platform for Point-of-Care Differential Detection of Malaria and Typhoid Fever, *Anal Chem* 93 (2021) 12175–12180. <https://doi.org/10.1021/acs.analchem.1c03298>.

⁷ K. Arias-Alpizar, A. Sánchez-Cano, J. Prat-Trunas, E. de la Serna Serna, O. Alonso, E. Sulleiro, A. Sánchez-Montalvá, A. Diéguez, E. Baldrich, Malaria quantitative POC testing using magnetic particles, a paper microfluidic device and a hand-held fluorescence reader, *Biosens Bioelectron* 215 (2022). <https://doi.org/10.1016/j.bios.2022.114513>.

⁸ J. K. Lee, H. N. Suh, S. Ahn, H. Bin Park, J. Y. Lee, H. J. Kim and S. H. Kim, *Sci. Rep.*, 2022, 12, 1–12

⁹ X. Jin, M. Zhong, Z. Zhu, J. Xie, J. Feng, Y. Liu, J. Guo, B. Li, J. Liu, J. Y. J. K. Lee, H. N. Suh, S. Ahn, H. Bin Park, J. Y. J. K. Lee, H. J. Kim, S. H. Kim, Z. Lucio-Rivera, G. Sanchez, W. Gorski, P. Manusha, S. Yadav, J. Satija and S.

Senthilkumar, *Talanta*, 2021, 12, 127434.

¹⁰ S. Chen, K. Shang, X. Gao and X. Wang, *Biosens. Bioelectron.*, 2022, 211, 114376

¹¹ X. Jin, M. Zhong, Z. Zhu, J. Xie, J. Feng, Y. Liu, J. Guo, B. Li and J. Liu, *J. Anal. Methods Chem.*, 2023, 3401001.

A linear relationship was observed between varying concentrations of NADH, ranging from 0.01 mM to 5.0 mM, and the recorded current response, expressed by the equation $y=1.8606x+0.1041$, with a correlation coefficient (R^2) of 0.9977. This highlights the high sensitivity, accuracy, and reliability of the NRG0/MdB-modified Au-SPE biosensor for electrochemical NADH quantification. The biosensor is therefore considered a valuable tool for biomedical and biochemical applications.

- Atik, AC., Topçu Ö., Balcı LD., Yılmaz, AM., Hanalioğlu, Ş., Külah H. '**MEMS-Based Microfluidics-Integrated Thin-Film Parylene-C Multi-Electrode Array for Subdural Neuromonitoring and Therapeutic Modulation in Traumatic Brain Injury**'. 35th Anniversary World Congress on Biosensors, 19-22 May 2025, Lisbon, Portugal.

Abstract: Cortical spreading depolarization (CSD) waves, often triggered by traumatic brain injury (TBI), lead to ionic and metabolic disruptions, suppression of brain activity, reduced cerebral blood flow, resulting in secondary brain damage. CSD waves can be identified by detecting the propagation of a large negative shift in DC potential (<0.5 Hz). Conventional macro-electrode arrays lack the spatio-temporal resolution for detailed modeling of the CSD dynamics. Furthermore, pharmacological modulation of cortical regions using N-methyl-D-aspartate (NMDA) receptor blockers, such as ketamine, has shown promise in mitigating secondary brain injuries. However, delivering these drugs across the blood-brain barrier (BBB) while minimizing side effects remains a challenge. To address these limitations, we present a MEMS-based microfluidics-integrated thin film multi-electrode array (MEA) designed for real-time monitoring, stimulation, and pharmacological intervention targeting CSD events. The proposed platform is realized through a fabrication technology for multi-layer parylene-based microsystems, integrating microfluidic channels and encapsulated platinum electrodes to provide both electrical and fluidic functionality. The prototype array, designed for rat brain placement, consists of 56 Euclidean circular electrodes within a 9 mm² area, spaced 300 µm apart, offering resolution sufficient to distinguish neuronal functional units. The porous parylene-C substrate with microscale holes reduces the effective elastic modulus to improve brain conformity and allow tissue perfusion. Nanostructured IrOx-modified electrodes provide low impedance, high electrochemical stability, and enhanced charge injection/storage capabilities. Integrated microchannels are designed to enable the precise and targeted delivery of therapeutic agents, facilitating direct modulation of specific cortical regions. Hydrophilic hydrogel coating enhances biocompatibility and adhesion, promoting a stable and reliable device-tissue interface. As a result, the hybrid flexible microelectrode array aims to advance neuroprosthetic interface technology by providing deeper insights into CSD dynamics following TBI and supporting the development of tailored therapeutic strategies for individual patients.

- Atik, AC., Topçu, Ö., Okan Aydın, M., Şanko, V., Balcı, LD., Külah H. '**A Miniaturized Implantable Electrochemical Sensor for Real-Time Monitoring of Brain Tissue Oxygen**'. 35th Anniversary World Congress on Biosensors, 19-22 May 2025, Lisbon, Portugal.

Abstract: Reduced cerebral perfusion, leading to decreased oxygen supply and altered partial pressure of oxygen (P_{tiO_2}), is a critical factor in many neurological conditions. Traditional Clark-type electrochemical sensors, though effective in measuring oxygen concentration, are unsuitable for implantation due to their bulk structure, reliance on liquid electrolytes, and calibration challenges. To address these limitations, we have developed a miniaturized, implantable electrochemical oxygen sensor that integrates a Nafion electrolyte membrane, nanostructured platinum electrodes, and an IrOx-coated reference electrode on Parylene-C substrates, aiming to enhance sensitivity, stability, and implantability. Our sensor features an innovative three-electrode configuration with circularly

interdigitated working (WE) and counter electrodes (CE) and a centrally positioned reference electrode (RE). Numerical simulations in physiological saline ($\epsilon = 80$, $\sigma = 1.4 \text{ S/m}$) using COMSOL Multiphysics v5.6 demonstrate a more uniform and higher current density distribution compared to conventional three-electrode designs, suggesting enhanced sensitivity and accuracy for oxygen monitoring. The electrodes are fabricated on biocompatible Parylene-C substrates, with thin-film sputter-coated platinum serving as the base layer for all three electrodes. The WE and CE are further modified of nanostructured platinum to increase the surface area. The RE is coated with IrOx through electrodeposition to provide superior electrochemical stability and durability for long-term use. Additionally, all electrodes are coated with a Nafion film that supports proton transport, integrating the dual functions of an electrolyte and a membrane. The sensor aims to demonstrate a linear response and high sensitivity to changes in oxygen partial pressure, ensuring reliable and precise detection across a physiologically relevant range. This work could contribute to the advancement of implantable oxygen sensor technology, offering a promising solution for real-time monitoring of dissolved brain oxygen levels, with potential applications in precise diagnostics and therapeutic strategies for neurological conditions.

- Balcı, LD., Atik, AC., Elçi, A., Külah H. '**Addressing Adhesion Challenges in Hybrid Parylene C and SU-8 Neural Probe Fabrication**'. 35th Anniversary World Congress on Biosensors, 19-22 May 2025, Lisbon, Portugal.

Abstract: Flexible neural probes are essential for advancing our understanding of brain function and enabling precise neuromonitoring and therapeutic interventions. Compared to silicon-based probes, polymer-based probes offer superior mechanical compatibility with brain tissue, reducing the risk of inflammation and irreversible damage caused by rigidity and brittleness. Among flexible materials, Parylene C and SU-8 emerge as complementary candidates for neural probe fabrication. Parylene C provides biocompatibility, and excellent suitability for layer-by-layer microfabrication, allowing integration of microsensors, electrodes, or microchannels. SU-8, with its adjustable thickness, enhances the rigidity of flexible probes, enabling effective insertion for deep brain applications. In this work, we propose a hybrid fabrication methodology combining Parylene C and SU-8 to improve neural probe performance. Parylene C functions as an encapsulation layer, supporting the integration of microsensors and electrodes, while SU-8 provides structural reinforcement to improve stiffness and facilitate deeper surgical implantation. The strategy is to enhance the rigidity of flexible neural probes by using SU-8 as a conformal coating on Parylene C substrates. SU-8, a negative photoresist, is highly suitable for this application due to its mechanical strength and ease of patterning through photolithography. Here, ensuring strong adhesion between these polymers is critical for achieving mechanical and electrical stability and reliability. To address this challenge, we investigated various adhesion enhancement strategies, including the use of metallic adhesion promoters (e.g., titanium, aluminum) and surface treatments in both liquid and gas phases. Adhesion properties were evaluated using saline exposure tests, manual tape tests, and advanced techniques such as pull test and shear strength measurements. This hybrid fabrication approach aims to create MEMS-compatible probes with enhanced insertion capabilities, and integrated functionalities for neuromonitoring.

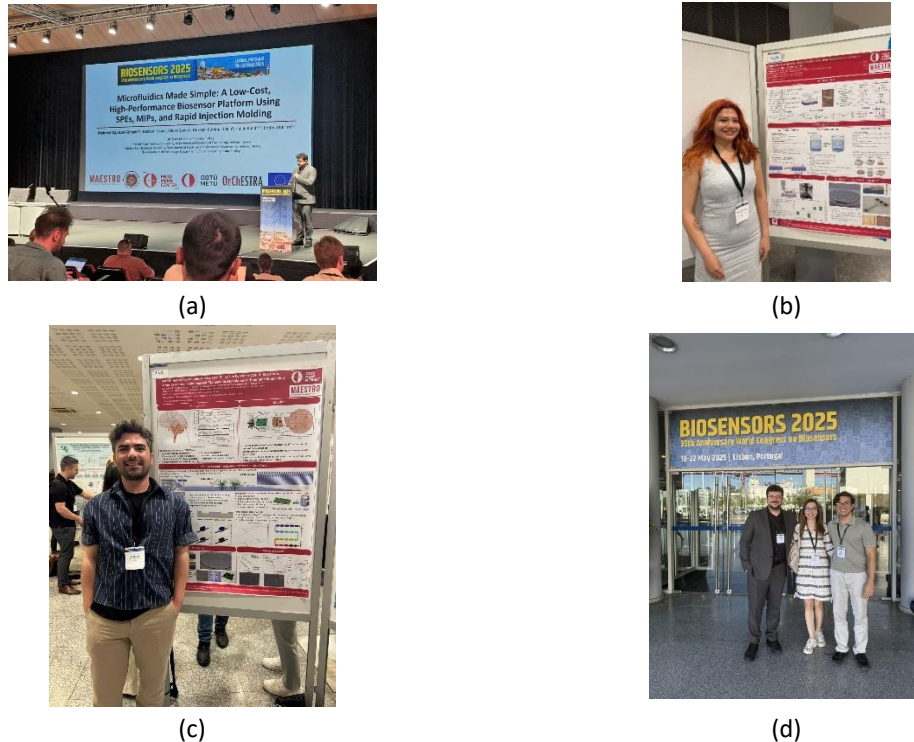


Figure 4: Biosensors 2025: (a) Oral presentation by Mehmet Oğulcan Güngör; (b) Poster presentation by Leman Dicle Balcı; (c) Poster presentation by Ali Can Atik; (d) Photo at the conference venue.

➤ **MPS World Summit 2025 (jointly organized with EUROoCS)**

Date: June 9-13, 2025

Location: Brussels, Belgium

OrChESTRA partners were present from IMEC (including Dr. Dries Braeken, Dr. Wolfgang Eberle) with several abstracts/posters on organ-on-chip and silicon MEA platforms. IMEC had abstracts accepted and posters presented on “Intra-organoid recording of electrophysiological activity using a silicon micro-mesh multi-electrode array platform”, “High-definition multi-modal heart-on-a-chip platform for cardiotoxicity screening”, “uEIT Cube: An in-depth 3D imaging platform for organoid models”, “3D blood-brain barrier on-chip with integrated sensing using silicon microfabrication”, “A novel silicon porous MEA for real-time, high-resolution monitoring of vascular dynamics”, “Optimization of co-culture conditions of hiPSC-derived brain-specific endothelial cells and pericytes on silicon micromesh blood-brain barrier chip”, “Pharmacological validation of a novel BBB-on-chip using an engineered silicon micromesh MEA chip”, “Enhancing neurodegenerative disease research with brain-on-a-chip and advanced biosensor technologies”.

Although there was no formal ODTÜ MEMS presentation, ODTÜ MEMS maintained engagement through its affiliated researcher network: one OrChESTRA-related poster from Prof. Özlem Yeşil-Çeliktaş’s (affiliated researcher at ODTÜ MEMS) group were discussed on site (“Intensive care unit (ICU) patient-on-a-chip model: Biomimicry for emulating mast cells and cerebral organoids in neuroinflammation”), and Pelin Sağlam Metiner—former student of Prof. Yeşil-Çeliktaş and a collaborating researcher—attended and discussed the work with the poster teams.

Proceedings with all abstracts (presentations and posters) are freely accessible:
https://proceedings.altex.org/data/2025_01/altex_MPS2025.pdf

Poster presentation:

- Saglam-Metiner, P., Yanasik, S., Odabasi, Y. C., Modamio, J., Negwer, M., Avci, C.B., Guler, A., Yildirim, E., Yesil-Celiktas, O. '**Intensive care unit (ICU) patient-on-a-chip model: Biomimicry for emulating mast cells and cerebral organoids in neuroinflammation**'. MPS World Summit 2025, 9-13 June 2025, Brussels, Belgium.

Abstract: The advanced brain organoid models allow the study of realistic human brain cellular interactions and structural architecture when combined with dynamic microphysiological systems that can recapitulate blood or cerebrospinal fluid circulation¹². These models have significant potential not only for the development of new therapies but also investigation of cellular responses to drug administration at extended durations such as the interventions in Intensive Care Units (ICUs). Propofol and midazolam are the current standard of care for prolonged sedation in ICUs. However, the effect and mechanism of these sedative substances in the realistic biomimetic brain tissue model has not been fully elucidated¹³. Herein, we highlighted a newly designed ICU patient-on-a-chip platform that consists of a vascular chamber with a membrane lined up microvascular endothelial cells to recapitulate the BBB where sedatives were infused for 4 days, and a neural tissue compartment formed by co-culturing of hiPSCs differentiated mast cells and cerebral organoids in 3D matrix. Propofol administration activated CD40/TNF- α mast cells, AIF1+ microglia and GFAP/S100B/OLIG2/MBP+ macroglia, as well as it caused NOS2/CD80/CD40/CD68/IL6/TNF- α mediated neuroinflammation in GJB1/GABA-A/NMDAR1+ cerebral organoids in the platform. On the other hand, midazolam administration activated mainly CD40/CD203c+ proliferative mast cells, CD11b+ microglia and GFAP+ macroglia, as well as increased glutamate-related neurotoxicity, IL1B/IFNG/IFNA1/ IL6 mediated neuroinflammation in DLG4/GJB1+ and GABA-A/NMDAR1- organoids with resulted in compromised BBB permeability and decreased TEER values with higher barrier disruption. These results suggest that different sedatives cause variations in cell type activation that modulate different pathways related to neuroinflammation and neurotoxicity in the ICU patient-on-chip platform. This study was financially supported by The Research Fund of Ege University, International Cooperation Project under grant number FUA-2020-22187, and was partially conducted under the OrChESTRA Project of European Union's Horizon Europe's research and innovation program under grant agreement no 101079473.

3.2 Events

International events were used to convene the community around organ-on-chip and microfluidics, combine focused knowledge transfer with networking, and create entry points for follow-up collaboration. During M25–M36, the programme comprised two OrChESTRA Summer Schools (2024 and 2025), the 4th International BioMEMS and Microfluidic Technologies Workshop, two brokerage events, and participation in a Horizon Europe synergy workshop. Each activity brought together knowledge sharing and networking.

¹² Saglam-Metiner, P., Devamoglu, U., Filiz, Y. et al. (2023). Commun Biol 6, 173. doi:10.1038/s42003-023-04547-1

¹³ Saglam-Metiner, P., Yanasik, S., Odabasi, Y. C. et al. (2024). Commun Biol 7, 1627. doi:10.1038/s42003-024-07313-z

3.2.1 Summer School – 1

The OrChESTRA Summer School 2024 was delivered on **16–19 September 2024** at **ODTÜ MEMS (Ankara)** as a four-day, in-person training on **microfluidics, biosensors and microphysiological systems**. The programme combined lectures, a **hands-on microfabrication** session and a two-stage **design challenge**. Speaker invitations were supported by OrChESTRA partners and Advisory Board members; contributions included **Dr. Vania Silvério (INESC MN)** and **Dr. Dries Braeken (IMEC)**. Event information and registration were hosted on the project website, with announcements via the website, LinkedIn and e-mail lists.

44 applications were received; given the hands-on component, 28 participants were selected and formed into five teams for the design challenge. Attendees were mainly MSc/PhD students, postdocs and early-career researchers in microfluidics, biosensing, organ-on-chip and related areas, representing multiple institutions and including international participants. The school provided structured skills development and peer exchange aligned with OrChESTRA themes. The Summer School–1 programme is provided in Appendix I. Full planning and delivery details are reported in Deliverable D1.3, to which this entry serves as a summary.



(a)



(b)

Figure 5: Various photos from the 1st Summer School: (a) presentation by ODTÜ MEMS; (b) full group photo.

3.2.2 4th BioMEMS and Microfluidic Technologies Workshop

Preparation Phase: Planning for the 4th BioMEMS and Microfluidic Technologies Workshop was coordinated to ensure clear scientific focus, a balanced programme, and smooth delivery. Preparation began with the establishment of the “Organisation Committee” to steer planning, logistics, and communications. A “Scientific Committee” was then convened to set the scientific scope, identify and invite speakers, and review the programme. Working together, the two committees defined the thematic blocks (microfluidics, biosensors, organ-on-chip), structured the two-day flow (keynotes, invited talks, early-career slots, short networking intervals), and managed communications (webpage, registration, and announcements).

Organisation Committee

- Hüseyin Cumhur Tekin, İzmir Institute of Technology — *Co-chair*
- Ender Yıldırım, Middle East Technical University — *Co-chair*
- Haluk Külâh, Middle East Technical University
- Özlem Yeşil Çelikaş, Ege University
- Gamze Kozanoğlu, ODTÜ MEMS Center
- Pınar Demirekler Burat, ODTÜ MEMS Center
- Gizem Özdemir, ODTÜ MEMS Center

Scientific Committee

- Ali Koşar, Sabancı University
- Arda Deniz Yalçinkaya, Boğaziçi University
- Arif Engin Çetin, İzmir Biomedicine and Genome Center
- Barbaros Çetin, İ.D. Bilkent University
- Cihat Taşaltın, TÜBİTAK Marmara Research Center (MAM)
- Devrim Pesen Okvur, İzmir Institute of Technology
- Emine Yegan Erdem, İ.D. Bilkent University
- Gizem Çalıbaşı Koçal, Dokuz Eylül University
- Hasan Uluşan, Middle East Technical University
- İlke Gürol, TÜBİTAK Marmara Research Center (MAM)
- Sinan Güven, İzmir Biomedicine and Genome Center
- Uğur Tamer, Gazi University

Invitations to speakers were issued with input from both committees, ensuring national and international representation from academia, research institutes, and industry. A dedicated webpage was used for information and online registration, and the workshop was announced via the project website, LinkedIn, and mailing lists, with standard event materials (programme PDF, banner, name badges, and promotional items) prepared for dissemination.

Through the OrChESTRA event website, 42 abstracts were received and distributed among Scientific Committee members for evaluation (fit to scope, technical quality, balance by topic/career stage). Following review, 40 abstracts were accepted for the programme—26 as poster and 14 as combined pitch and poster presentation. Accepted entries were scheduled into poster and pitch/poster slots, and authors were informed of the format and timing.

Figure 6 displays various images from the LinkedIn news feed and the project website. These preparatory steps were crucial in building a robust platform for the exchange of knowledge and ideas among attendees.



Figure 6: (a) Image from project website dedicated to the workshop; (b) Online registration form (c) LinkedIn post.

Event: The 4th BioMEMS and Microfluidic Technologies Workshop, held 8–9 May 2025 in a hybrid format at the İzmir Institute of Technology (IZTECH), İzmir, Türkiye, was jointly organised with the “6th Novel Fluidic Technologies Workshop” to broaden reach and impact. The programme brought together invited talks and themed sessions on recent advances in BioMEMS, microfluidics and organ-on-chip, complemented by short contributions from early-career researchers. The hybrid set-up supported more than 150 participants and active exchange, with Q&A and networking segments fostering method sharing and opening avenues for future collaboration.

Day 1: The workshop opened with registrations and welcome remarks, followed by three plenary talks provided an overview of the key topics: Severine Le Gac (University of Twente, in person) on organ-on-chip for disease modelling; Fabiana Arduini (University of Rome Tor Vergata, online, AB member of OrChESTRA) on electrochemical paper-based microfluidic devices; and Nicole Pamme (Stockholm University, online) on microfluidic approaches for analysis in resource-limited settings.

The invited session continued with Prof. Haluk Külâh (METU and ODTÜ MEMS, in person) presenting Multiscale BioMEMS Solutions for Neural Interfaces and Cancer Diagnostics, and Assoc. Prof. Özlem Yeşil Çelikleş (Ege University and ODTÜ MEMS, in person) discussing The Triple Helix: Pharmaceuticals, Environment and Organ-on-Chips.

After lunch, a Young Researcher Podium featured short talks selected from submitted abstracts, offering early-career scientists a platform to share ongoing work. The afternoon closed with poster presentations and an ERC Grantee Session – Success Stories in Türkiye, a panel with Haluk Külâh and Serhat Tozburun (IBD, Dokuz Eylül University). The format balanced high-level perspectives with emerging research, and provided ample interaction across plenary, podium and poster sessions.

Day 2: Morning plenaries introduced complementary perspectives on microphysiological systems and flow physics: Niels Bent Larsen (DTU, online) on 3D micro-perfused microphysiological systems; Jonas Tegenfeldt (Lund University, in person) on viscoelastic fluidics components; and Andreas Hierlemann (ETH Zurich, in person) on microphysiological systems featuring microsensor structures. Poster presentation session was followed. The late-morning block featured Ender Yıldırım (METU and ODTÜ MEMS, online) on ultrasonic-assisted fabrication of SERS substrates, and H. Cumhur Tekin (İzmir Institute of Technology and ODTÜ MEMS, in person) on centrifugal filling and fluidic control in dead-end microchannels.

After lunch, an Industry Session—Company Presentations & Panel: Opportunities and Challenges in Commercialisation—brought contributions from Özge Zorlu (Cellsway) and Devrim Pesen Okvur (Initio Cell). The afternoon session continued with an Honorary Session: A Tribute to Prof. Banu Onaral, with talks by Jamie Mak, Hasan Ayaz and Wan Shih. The programme concluded with Andries van der Meer (University of Twente, online) on Organs-on-Chips: From platform technology to applications in drug development, followed by the Best Poster Award and closing remarks. Best Poster Awards were presented to Başar Doğan (Department of Bioengineering, Ege University) for “Lung Cancer Metastasis-on-a-Chip: A Preclinical Model for Studying EMT and Tumor Progression”, and to Göktürk Cinel (Department of Bioengineering, İzmir Institute of Technology) for “Computational Design and Additive Manufacturing of a Microfluidic System for the Controlled Iron Oxide Nanoparticle Synthesis.



Figure 7: Highlights from the 4th BioMEMS and Microfluidic Technologies Workshop: (a) venue entrance with event banner; (b) plenary session in the main hall; (c) panel discussion on stage; (d) poster session and networking; (e) ODTÜ MEMS / OrChESTRA information desk; (f) best-poster award ceremony.

Abstract Book: An Abstract Book was compiled at the close of the workshop to provide a permanent, citable record of contributions. The volume brings together all accepted abstracts with author affiliations. The Abstract Book carries ISBN 978-625-00-6998-1 and available on the OrChESTRA's website (https://www.orchestra-project.eu/files/ugd/2a674c_2750815d15734681bb060596ba7374e2.pdf). The programme of the 4th BioMEMS and Microfluidic Technologies Workshop is provided in Appendix II.

3.2.3 Summer School – 2: Engineering Summer School High School Student Program

On 3–4 July 2025, a two-day programme for high-school students was delivered at ODTÜ MEMS under the METU Engineering Summer School, with 62 participants organised in two groups. The format combined short introductions with hands-on activities: a MEMS overview, a cleanroom introduction and tour, a pulse-monitoring electronics experiment (ADALM1000 platform), and an introductory microfluidics demonstration. Applications were taken via the METU Summer School platform; participants were arranged into three rotating groups to attend the sessions. Supporting materials (experimental guide and brief quiz) structured the activities.

The programme aimed to familiarise students with core concepts of micro-engineering and laboratory practice in an age-appropriate setting, linking simple circuit building and signal observation to real-world biomedical sensing, and illustrating fluid behaviour at the microscale. Session flow and materials were standardised to ensure consistent delivery across groups; a short quiz was used for formative feedback. More information about summer schools is reported in D1.3. The agenda of the Summer School – 2 is given in Appendix III.

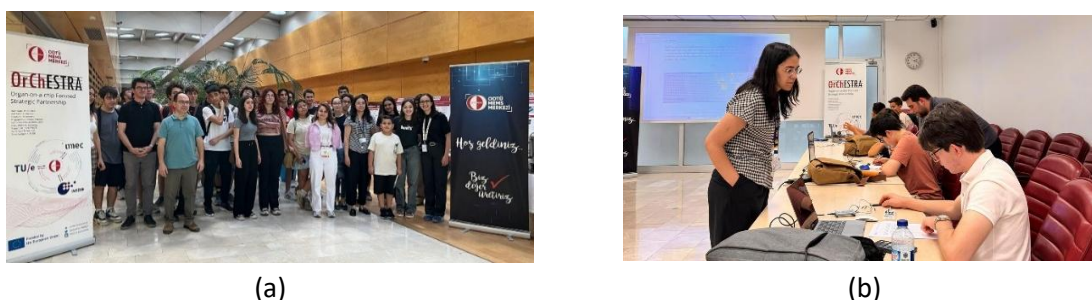


Figure 8: Various photos from the 2nd Summer School: (a) full group photo; (b) image from the hands-on sessions.

3.2.4 Brokerage Event – Ankara

Preparation Phase: Planning for the OrChESTRA Brokerage Event (Ankara) was aligned with two co-located meetings—APA 2025 (<https://apa2025.net/>) and ITP 2025 (<https://www.itp2025.org/>)—whose themes overlap with organ-on-chip, microfluidics and related technologies. Although not foreseen in the original work plan, the activity was pursued to enhance dissemination and networking impact. The APA/ITP organisers were contacted and a half-day side session was arranged under OrChESTRA.

TÜBİTAK National Contact Points (NCPs) were invited to provide an overview of upcoming Horizon Europe calls, with attention to the Health work programme. The second part was structured as a brokerage segment (short pitches) open to APA/ITP attendees interested in the relevant topics.

Participation was limited to registered APA/ITP participants, and a dedicated OrChESTRA sign-up page was created (Figure 9) to collect expressions of interest and basic profiles (organisation, role, etc.). Announcements were posted on the OrChESTRA website and shared via the APA/ITP organisers.

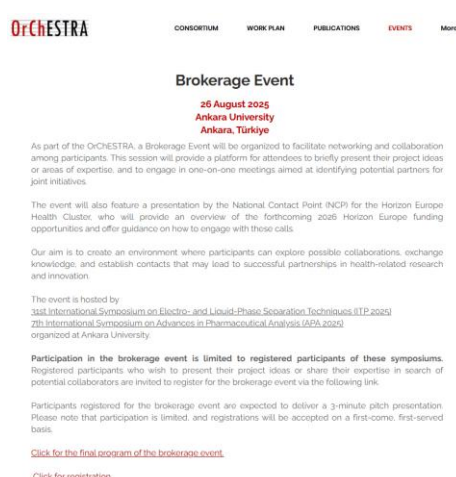


Figure 9: The project website dedicated to Ankara BE

Event: The brokerage session was held in Ankara on 26 August 2025 as a half-day, in-person side event alongside APA 2025 and ITP 2025. In total, 24 participants joined from universities, research centres and companies. The programme opened with a welcome and a short recap of OrChESTRA aims, followed by a briefing from TÜBİTAK National Contact Points on the pipeline of upcoming Horizon Europe Health calls (scope, indicative timelines, expected impacts and basic eligibility/budget rules).

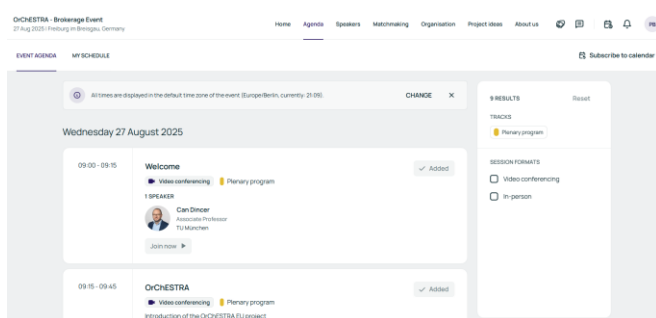
A pitch block then featured five short technical presentations from attendees, each outlining a team's capabilities, current results and preferred collaboration roles (e.g., model systems, sensing, microfabrication, etc.). The second half of the session was reserved for structured one-to-one discussions, allowing researchers to explore complementarities, compare readiness levels and note immediate follow-ups. The agenda of the Brokerage Event – Ankara is given in Appendix IV.



Figure 10: Images showing (a) opening introduction and ODTÜ MEMS / OrChESTRA overview; (b) TÜBİTAK NCP briefing; (c–d) participant pitch presentations.

3.2.5 Brokerage Event – Freiburg

Preparation Phase: The OrChESTRA Brokerage Event (Freiburg) was planned as a hybrid session and scheduled for 27 August. A short event page was created on the project website, and b2match was selected for registration, profile creation, and matchmaking/bilateral scheduling. To anchor the programme, UFR's EU Head Office was approached to provide a briefing on Horizon Europe proposal practice and institutional experience, and the Health NCP was contacted to give an overview of relevant upcoming calls. The agenda and sign-up were managed via b2match, with access shared through the project website and direct invitations to interested participants.



(a)

OrChESTRA Hybrid Brokerage Event

27 August 2025
University of Freiburg & Online

As part of the OrChESTRA Project, a Hybrid Brokerage Event will be organised on 27 August 2025 in Freiburg, Germany (with the possibility to join online). The event is designed to facilitate networking and collaboration among participants by providing a platform to explore Horizon Europe 2026 funding opportunities in Healthcare, Digital, and Industrial Technologies.

This brokerage session will allow participants to briefly present their project ideas or areas of expertise, and to engage in one-on-one meetings aimed at identifying potential partners for future joint initiatives. In addition, National Contact Points (NCPs) for Health, Digital, and Industrial Technologies, together with the EU Bureau of the University of Freiburg, will provide insights into the upcoming 2026 calls and offer guidance on how to align proposals with Horizon Europe priorities.

The event will take place in hybrid format, combining an in-person session in Freiburg with online participation for those unable to travel. In-person attendance will be limited to ensure high-quality interactions.

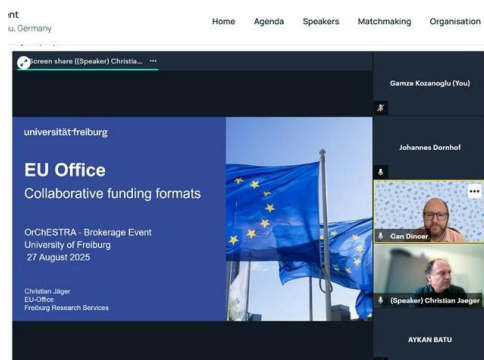
[Click for the final program of the hybrid brokerage event.](#)

[Click for registration.](#)

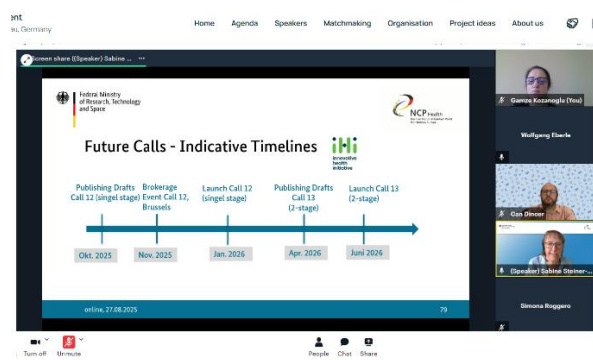
(b)

Figure 11: Freiburg Hybrid Brokerage Event: (a) b2match agenda/registration page; (b) OrChESTRA website announcement.

Event: The hybrid brokerage session took place on 27 August at the University of Freiburg and online. The programme opened with a welcome, followed by a Horizon Europe practice briefing by UFR's EU Head Office and a detailed Health NCP overview of forthcoming calls. A concise pitch/needs round were organised via b2match, which was also used for profiles and scheduling. Attendance comprised 23 participants. Despite the small group, the hybrid format allowed focused exchanges and targeted discussions aligned with organ-on-chip, microfluidics, and biosensing topics. The agenda of the Brokerage Event – Freiburg is given in Appendix V.



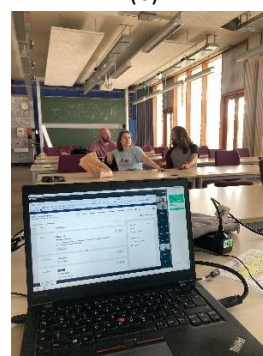
(a)



(b)



(c)



(d)

Figure 12: Freiburg Hybrid Brokerage Event: (a) UFR EU Office briefing; (b) Health NCP overview of forthcoming calls; (c) participant pitch session (example talk on microfluidic/MEMS fabrication); (d) in-person session at UFR.

3.2.6 Synergy workshop – Rome

As part of OrChESTRA's efforts to build links beyond the consortium, contacts with the Phoenix-OoC team in Rome were strengthened through an existing professional connection between Prof. Fabiana Arduini (Phoenix-OoC coordinator) and Dr. Can Dinçer (UFR). Prof. Arduini suggested a sister-project arrangement and invited OrChESTRA to a synergy workshop in Rome. Following this exchange, she joined OrChESTRA's Advisory Board, and OrChESTRA's technical manager Dr. Ender Yıldırım was invited to the Phoenix-OoC Advisory Board. OrChESTRA subsequently participated in the HE synergy workshop alongside Phoenix-OoC, UNLOOC (Chips JU), BuonMarrow, and OMICSSENS. The half-day session focused on sharing project roadmaps, exploring technical complementarities, and identifying collaboration opportunities in the organ-on-chip domain. Participation supported peer exchange on platform architectures and data/validation practices and surfaced several areas for informal follow-up (e.g., assay integration and standardisation touchpoints).



Figure 13: Synergy workshop — Rome: (a) event programme; (b) group photo.

4 CONCLUSION

This report has documented the national and international events delivered or attended under OrChESTRA in M25–M36, highlighting how a coordinated mix of summer schools, workshops, brokerage sessions, student days and conference participation was used to disseminate results, exchange know-how and expand the project's professional network in microfluidics and organ-on-chip. Across these activities, structured formats—talks and hands-on sessions, partner and NCP briefings, pitch blocks and one-to-one meetings—provided practical channels for knowledge transfer and collaboration-building, while student-facing events helped nurture early interest and awareness of the field.

Taken together, the programme supported OrChESTRA's core objectives: raising the research profile of ODTÜ MEMS and its staff, strengthening institutional capacity, and deepening integration into European networks of excellence. International workshops and summer schools enabled targeted skills development; brokerage events connected researchers to forthcoming opportunities; joint attendance at conferences kept the consortium close to the state of the art and visible to peers. Several of these engagements also informed subsequent collaboration discussions and proposal preparations reported in other deliverables.

While the scope of this document is intentionally limited to events under WP4, the practices established in this deliverable, form a reusable toolkit for continued outreach and collaboration beyond the project period. In this sense, the M25–M36 event portfolio not only delivered on WP4 – Engagement and strategic networking activities during implementation, but also laid foundations for sustained community links and future joint work in organ-on-chip and microfluidics.

5 APPENDICES

Appendix I: The Programme of the Summer School – 1



MICROFLUIDICS, BIOSENSORS, AND MICROPHYSIOLOGICAL SYSTEMS SUMMER SCHOOL

by OrChESTRA Project
Organ-on-a-Chip Focused Strategic Partnership
ODTÜ MEMS Center, Ankara
Schedule
16 – 19 September 2024

Day1 – 16 September

9:30 - 10:00 Registration
10:00 - 11:00 Opening Remarks
Introduction of OrChESTRA Project and partners (ODTÜ MEMS, IMEC, UFR, TU/e)
11:00 - 12:00 Site visit to ODTÜ MEMS clean room facilities
12:00 - 13:30 Lunch
13:30 - 14:50 Lecture: "Fundamentals of Microfluidics" (Dr. Hüseyin Cumhuri Tekin, IZTECH / ODTÜ MEMS)
14:50 - 15:00 Coffee Break
15:00 - 16:20 Lecture: "Fundamentals of Microfabrication with a focus on fabrication of microfluidics" (Dr. Vania Silverio, INESC MN)

Day 2 – 17 September

9:30 - 10:50 Lecture: "Flow generation and control in microfluidic systems" – (Dr. Ender Yıldırım, METU, ODTÜ MEMS)
10:50 - 11:00 Coffee Break
11:00 - 12:20 Lecture: "Electrical Sensing Methods" (Dr. Hasan Uluşan, ODTÜ MEMS / METU)
12:20 - 13:30 Lunch
13:30 - 14:50 Lecture: "Optical Sensing Methods" (Dr. Uğur Tamer, GAZI Univ. / ODTÜ MEMS)
14:50 - 15:00 Coffee Break
15:00 - 16:00 Company presentation (Eden Microfluidics)

Day3 – 18 September

9:00 - 11:00 Hands-on Session: Microfabrication Techniques
11:00 - 11:10 Coffee Break
11:10 - 12:30 Lecture: "Introduction to microphysiological systems" (Dr. Özlem Yeşil Çelikkale, EGE Univ. / ODTÜ MEMS)
12:30 - 13:30 Lunch
13:30 - 14:50 Lecture: "Imaging techniques" (Dr. Altuğ Özçelikkale, METU)
14:50 - 15:00 Coffee Break
15:00 - 16:20 Lecture: "Engineering the microenvironment" (Dr. Dries Braeken, IMEC)

Day 4 – 19 September

09:30 - 11:00 Design Challenge: Introduction (Dr. Ender Yıldırım, METU / ODTÜ MEMS)
11:00 - 12:30 Design Challenge: Workshop 1
12:30 - 13:30 Lunch
13:30 - 15:00 Design Challenge: Workshop 2
15:00 - 16:00 Design Challenge Presentations
16:00 - 16:30 Closing Remarks

Venue: <https://goo.gl/maps/Wp88QM721heRvoKt8>



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European Union

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Appendix II: The Programme of the 4th BioMEMS and Microfluidic Technologies Workshop and the Registration Form



AGENDA

8 May 2025, Thursday

09:00 - 09:45	Registrations
09:45 - 10:00	Opening Remarks
10:00 - 10:30	Plenary Session: Severine Le Gac, University of Twente (in-person) "Organ-on-Chip for disease modeling"
10:30 - 11:00	Plenary Session: Fabiana Arduini, University of Rome Tor Vergata (online) "Electrochemical paper-based microfluidic devices"
11:00 - 11:30	Plenary Session: Nicole Pamme, Stockholm University (online) "Microfluidic approaches for analysis in resource-limited settings"
11:30 - 12:00	Invited Talk: Haluk K��lah, Middle East Technical University (in-person) "Multiscale BioMEMS Solutions for Neural Interfaces and Cancer Diagnostics"
12:00 - 12:30	Invited Talk: ��zlem Ye��il ��elikta��, Ege University (in-person) "The triple Helix: Pharmaceuticals, Environment and Organ-on-chips"
12:30 - 13:45	Lunch Break
13:45 - 14:45	Young Researcher Podium: Short presentations of selected abstracts
14:45 - 15:00	Coffee Break
15:00 - 16:00	Poster Presentations
16:00 - 17:00	ERC Grantee Session: Success Stories in T��rkiye Panelists: Haluk K��lah (METU), Serhat Tozburun (IBD, DEU)

9 May 2025, Friday

09:30 - 10:00	Plenary Session: Niels Bent Larsen, DTU (online) "3D Microperfused Microphysiological Systems"
10:00 - 10:30	Plenary Session: Jonas Tegenfeldt, Lund University (in-person) "Viscoelastic Fluidics Components"
10:30 - 11:00	Plenary Session: Andreas Hierlemann, ETH Zurich (in-person) "Microphysiological Systems Featuring Microsensor Structures"
11:00 - 11:30	Poster Presentations (with coffee break)
11:30 - 12:00	Plenary Session: Ender Yildirim, Middle East Technical University (online) "Ultrasonic Assisted Fabrication of SERS Substrates"
12:00 - 12:30	Plenary Session: H. Cumhur Tekin, Izmir Institute of Technology (in-person) "Centrifugal Filling and Fluidic Control in Dead-End Microchannels"



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12:30 - 13:45	Lunch Break
13:45 - 14:45	Industry Session: Company Presentations & Panel – Opportunities and Challenges in Commercialization Özge Zorlu (Cellsway), Devrim Pesen Okvur (Initio Cell)
14:45 - 15:00	Coffee Break
15:00 - 16:00	Honorary Session: A Tribute to Prof. Banu Onaral Speakers: Jamie Mak, Hasan Ayaz, Wan Shih
16:00 - 16:30	Plenary Session: Andries van der Meer, University of Twente (online) “Organs-on-Chips: From Platform Technology to Applications in Drug Development”
16:30 - 17:00	Best Poster Award Ceremony & Closing Remarks

USEFUL INFORMATION

Location, venue:

İzmir Institute of Technology (IZTECH) – İzmir Yüksek Teknoloji Enstitüsü (İYTE)

Gülbahçe Kampüsü 35430 Urla İzmir Türkiye

The event will take place at the Show Hall (Gösteri Merkezi) located inside the IZTECH Library (İYTE Kütüphanesi) building.

Google Maps link:

<https://maps.app.goo.gl/7hbf5xCygUC1ZNjr9>

For public transportation options and other travel information, please refer to the following link:

<https://iyte.edu.tr/iletisim/>



- For lunch, participants are expected to use the various dining options available on the IZTECH campus at their own convenience.

Acknowledgements

Organised within the framework of the OrChESTRA project coordinated by ODTÜ MEMS Center, the workshop benefits from the synergistic collaboration of leading European research organisations.

Izmir Institute of Technology (IZTECH) is generously hosting the workshop activities, providing the venue, logistical support, and on-site coordination.

The event is jointly organised with the 6th Novel Fluidic Technologies Workshop, with additional organisational support provided by Ege University.



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Appendix III: The Programme of the Summer School – 2



PROGRAM

30 Haziran - 11 Temmuz 2025

Perşembe; 03 Temmuz

- 09:30 MEMS 101 ‘Mikro-Elektro-Mekanik Sistemler’
Prof. Dr. Haluk Külah ve Doç. Dr. Emre Büküşoğlu
- 12:30 Öğle Yemeği, ODTÜ Kafeterya
- 14:00 Laboratuvar Uygulama Çalışmaları
GRUP 1: MEMS; ODTÜ Mikro-Elektro-Mekanik Sistemler Araştırma ve Uygulama Merkezi
GRUP 2: MERLAB; ODTÜ Merkezi Laboratuvar
- 17:00-18:00 Koçlarla Kahve Saati / Proje Toplantısı / Ayrılış

Cuma; 04 Temmuz

- 09:30 Co-Zone ODTÜ Teknokent Ziyareti
‘Girişimcilik’ Semineri; Serdar Alemdar
‘Patnet ve Fikri Mülkiyet Hakları’ Semineri; Aytülü Sert
- 12:30 Öğle Yemeği, ODTÜ Kafeterya
- 14:00 Laboratuvar Uygulama Çalışmaları
GRUP 1: MERLAB; ODTÜ Merkezi Laboratuvar
GRUP 2: MEMS; ODTÜ Mikro-Elektro-Mekanik Sistemler Araştırma ve Uygulama Merkezi
- 17:00 Etkinlik: Softbol Maçı - ODTÜ Beyzbol Topluluğu
- 17:30-18:00 Ayrılış

Appendix IV: The Programme of the Brokerage Event – Ankara



Brokerage Event

AGENDA

26 August 2025, Tuesday
Ankara University, Ankara, Türkiye

13:20 - 13:30	Registrations
13:30 - 13:40	Opening Remarks
13:40 - 14:00	Overview of the Organ-on-a-Chip Focused Strategic Partnership (OrChESTRA) Project <i>Ender Yıldırım</i> <i>ODTÜ MEMS Center</i>
14:00 - 14:40	Overview of the upcoming Horizon Europe Calls <i>National Contact Points (tbc)</i>
14:40 - 15:20	Pitching Session - I
15:20 - 15:30	Coffee Break
15:30 - 16:10	Pitching Session - II
16:10 - 17:30	One-to-one Matchmaking Meetings

ACKNOWLEDGEMENTS

Organised within the framework of the OrChESTRA project coordinated by ODTÜ MEMS Center, the Brokerage Event benefits from the synergistic collaboration of leading European research organisations.

Ankara University is generously hosting the brokerage event activities, providing the venue, logistical support, and on-site coordination.

The event is hosted by 31st International Symposium on Electro- and Liquid-Phase Separation Techniques (ITP 2025) and 7th International Symposium on Advances in Pharmaceutical Analysis (APA 2025) organized at Ankara University.



Funded by the
European Union

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Appendix V: The Programme of the Brokerage Event – Freiburg

OrChESTRA - Brokerage Event

27 Aug 2025 | Freiburg im Breisgau, Germany

Home

Agenda

Speakers

Matchmaking

Org

EVENT AGENDA

MY SCHEDULE

Wednesday 27 August 2025

09:00 - 09:15

Welcome

Video conferencing

Plenary program

✓ Added

1 SPEAKER



Can Dincer

Associate Professor

TU München

Join now

09:15 - 09:45

OrChESTRA

Video conferencing

Plenary program

✓ Added

Introduction of the OrChESTRA EU project

1 SPEAKER



Ender Yildirim

Assoc. Prof.

ODU MEDS Center

Join now

OrChESTRA - Brokerage Event

27 Aug 2025 | Freiburg im Breisgau, Germany

Home

Agenda

Speakers

Matchmaking

Or

EVENT AGENDA

MY SCHEDULE

09:45 - 10:30

EU bureau University of Freiburg

Video conferencing

Plenary program

✓ Added

Advisory structures and funding opportunities at University of Freiburg

1 SPEAKER



Christian Jaeger

Head of EU Office

IMTEK Albert-Ludwigs-Universität Freiburg

Join now

10:30 - 10:45

Coffee break

In-person

Add

10:45 - 12:15

National Contact Point: Health

Video conferencing

Plenary program

✓ Added

General information about Horizon Europe

1 SPEAKER



Sabine Steiner-Lange

National Contact Point

DLR Projektträger

OrChESTRA - Brokerage Event

27 Aug 2025 | Freiburg im Breisgau, Germany

Home

Agenda

Speakers

Matchmaking

Or

EVENT AGENDA

MY SCHEDULE

12:15 - 13:00

Lunch

In-person

Add

13:00 - 15:00

Self-Intros

Video conferencing

Plenary program

Add

In this session each researcher / consortium will have 5 min to introduce themselves, their expertise and research interests

Join now

15:00 - 15:30

Coffee break

In-person

Add

15:30 - 17:30

Meetings

Matchmaking

20 minute time slots

Opportunity for researchers to network and build collaborations or consortia

✓ Added

All time slots selected as available for meetings. [Edit availability](#)