

1 Publications Moore4Medical

1.1 Overview

For an industrially oriented project like Moore4Medical, conferences and symposia are a natural and convenient medium for dissemination, with a similar division between technology, and clinically/biologically oriented venues as in the case of journal publications.

A full list of all publications and conference contributions is available in Section 2. Table 1 summarizes the publication statistics at the end of the project.

Table 1: Summary of the publications, symposia, and conferences.

	year 1	year 2	year 3	total
Peer-reviewed journals	6	11	22	39
Miscellaneous articles	3	-	3	6
Peer-reviewed Conferences	3	29	46	78
Symposia, presentations, talks	18	21	38	77
total	30	61	109	200
total number of dissemination items				200

In total **12 invited presentations** were recorded.

In the next subsections, three topics are highlighted where the partners were especially prolific in disseminating the results to a broad audience.

1.2 Highlight 1: Organ-on-Chip

Organ-on-Chip is a rapidly growing emerging field that is generating a large amount of interest both from academic as well as industrial perspectives. Originating from academia only a little more than a decade ago, it is now moving towards implementation in pharmaceutical and CRO workflows. To make this happen a transition from typical “laboratory style” organ-on-chip devices towards device formats that can be handled by non-technical staff at pharmaceutical companies, and that directly fit into their standard workflows is needed.

Although the organ-on-chip field is rather new, it has quickly organised itself on a European level. The Dutch organ-on-chip institute hDMT (Human organ and disease model technology) was one of the first examples of how biology, technology and clinical development can be bundled in one (virtual) institute (www.hdmt.technology). In the meantime, many countries have adopted this model, and this eventually resulted in the foundation of a European organ-on-chip organization EUROoCS (<https://euroocs.eu/>).

The yearly conferences organized by EUROoCS have grown into enormous events where hundreds of participants originating from academia, industry as

well as pharma gather to exchange ideas and information. With an increasing focus on workflow integration, the smart well plate developed in Moore4Medical is receiving a great deal of attention.



Figure 1: Moore4medical partners presenting at the 2022 EUROoCS conference in Grenoble, France, where Moore4Medical was present with 1 Keynote speech, 3 oral presentations, 7 posters (including the best poster award) and 2 booths

The 2022 EUROoCS conference was in Grenoble and hosted by CEA Leti. More than 500 participants registered, thereby calling for a registration stop. At the conference, Moore4Medical was prominently present with 1 keynote speech, 3 oral presentations, 7 posters (including the best poster award) and 2 booths.

The 2023 EUROoCS conference was organised together with its American sister organization and was held in Berlin as the 2nd Microphysiological Systems World Summit 2023 with more than 1200 participants. Moore4Medical was again prominently present with 1 oral presentation, 11 posters and 5 booths.



Figure 2: Moore4Medical partners presenting at the 2023 EUROoCS conference in Berlin, Germany, where Moore4Medical was present with 1 oral presentation, 11 posters and 5 booths.

1.3 Highlight 2: Ultrasound power transfer

One of the most prestigious conferences in the field of ultrasound (transducers, theory, technology, imaging, applications) is the IUS, the IEEE International Ultrasound Symposium. Throughout the project, Moore4Medical has had a strong presence at these conferences, with 9 posters/presentations at the 2021 IUS (online), 7 posters/presentations at the 2022 IUS in Venice, and in September 2023 Moore4Medical partners will again be presenting 7 posters/presentations at this year's IUS in Montreal.

It is very gratifying to see that throughout the project the focus of the papers submitted has shifted from regular medical imaging towards the topic of ultrasound power transfer for implantable devices, the main topic of WP1.



Figure 3: Moore4Medical partners presenting at the 2022 International Ultrasound Symposium in Venice, Italy.

1.4 Highlight 3: Smart drug delivery injector pen

The enthusiastic group of partners working on the smart drug delivery injector pen were also very prolific in the dissemination of their achievements and results. In total, this resulted in 2 journal publications, 12 conference presentations/posters, including two invited talks and a keynote address, 1 PhD defence and 3 master theses.



Figure 4: Moore4Medical partners presenting their work on the smart drug delivery injector pen at various conferences and symposia.

2 List of publications

Year 1

Items printed in **bold** are peer-reviewed.

1. Partner Salvia was featured in a “Start-ups to Watch” article in the journal of the Medtech Strategist 2019
https://salvianeuro.com/MTS_Salvia_20190313_UL.pdf
2. M.M. de Kok (TNO/Holst), Unobtrusive Flexible Electronics for Biomedical Applications,” Invited, IDTechEx Show, Santa Clara, CA, United States, November 21, 2019
3. The Moore4Medical project featured in an interview for Artemis Magazine “International Networks and Growing Innovation, ECEL’s Impact in Latvia and the Netherlands,” Artemis Magazine no. 28 (2020) <https://artemis-ia.eu/publications.html> [Doc_130]
4. Health.E lighthouse presentation for the 21st International Conference on Industrial Technology Innovation (ICITI, 2020), Digital Innovation for smart health and wellbeing. In the context of open technology platforms, the presentation references the MOORE4MEDICAL project. Date: October 15 (Thursday) 2020 Venue: Taiwan Institute of Economic Research (online) [Doc_139]
5. Health.E lighthouse presentation for the MedTech&Pharma Platform Conference. In the context of open technology platforms, the presentation references the MOORE4MEDICAL project. 22-23 October (online) <https://www.medtech-pharma.com/program> [Doc_140]
6. In a Health.E lighthouse presentation for the 21st International Conference on Industrial Technology Innovation (ICITI, 2020), Digital Innovation for smart health and wellbeing, the Moore4Medical project was extensively referenced. Date: October 15 (Thursday) 2020 Venue: Taiwan Institute of Economic Research (online) [Doc_139]
7. In a Health.E lighthouse presentation for the MedTech&Pharma Platform Conference the Moore4Medical project as extensively referenced, 22-23 October (online) <https://www.medtech-pharma.com/program> [Doc_140]
8. The Moore4Medical project was presented in the booth of the Health.E lighthouse at the EF ECS2020 conference 25-26 November 2020 (online) [Doc_152]
9. The Moore4Medical project was used as an example in a presentation during the EF ECS2020 symposium in a Health.E lighthouse presentation in which the first Health.E white paper on emerging medical domains was presented [Doc_152]
10. M.M. de Kok (TNO/Holst) “Smart Sensing Surfaces for Vital Signs Monitoring,” Monitoring and Diagnosis Using Large-Area Sensors, Webinar, November 2nd, 2020
11. In November 2020 the Dutch “foundation for biosciences and society” published a booklet (mini cahier) titled “Mini Organs-on-Chips.” The book refers to the smart well plate that is being developed in Moore4Medical. The booklet is available in Dutch and English <https://www.biomaatschappij.nl/wordpress/wp-content/uploads/2020/11/BWM-Mini-Organs-on-Chips.pdf>
12. The Moore4Medical project was extensively highlighted in an invited keynote presentation during the international MicroNanoConference in a Health.E lighthouse presentation 3-4 December 2020 [Doc_155]
13. Robin de Bruin from Philips Innovation Services gave a presentation of Flex-2-Rigid in the context of microfluidics and open technology platforms “Philips

- MEMS Foundry solved challenges in the democratization of medical devices by providing a cost-effective solution” Microfluidics Consortium Open Day Meeting California (online) Feb 4th 2021.[Doc_157]
14. Erik Dijkema, “Towards CMUT for Neurostimulation: The Development of an Experimental Model for the Validation of Ultrasound Neuromodulation and Back-side Vent Etching for Low-Frequency CMUT Devices,” Master Thesis, Technical University of Delft, November 2020. Available for download [here](#).
 15. Yuri Westhoek, “Ultrasound Energy Transfer using Charged CMUTs,” Master Thesis, Technical University of Delft, November 2020. Available for download [here](#).
 16. On the 24th of February 2021 the Health.E lighthouse gave a keynote speech during the Life-on-Chip conference organized by Flanders Health and Innovation organizations, which was attended by more than 350 participants. In this presentation examples were shown from the ECSEL JU POSITION and Moore4Medical projects on the development of open technology platforms for medical devices [Doc_160]
 17. In the online LOPEC conference on printed electronics, Fraunhofer IZM featured a booth in which amongst others they showed off their expertise developed in the POSITION and Moore4Medical projects. March 23-25 2021 Online. <https://exhibitors.lopec.com/industry-directory/2021/list-of-companies/companydetails/?elb=864.1100.1990.1.111>
 18. On the 16th of April there was a Webinar from the Dutch NextGen HighTech initiative in which the smart well plate from Moore4Medical was highlighted as an example of HighTech electronics going hand-in-hand with cell biology. [Doc_165]
 19. Rob van Schaijk (Philips) “MEMS for medical applications CMUT and BioMEMS,” MEMS & Sensor Technical Congress, Virtual event 13-15 April 2021, SEMI, <https://www.semi.org/en/connect/events/mems-and-sensors-technical-congress-mstc#overview> [Doc_166]
 20. Stieglitz, T., (uni Freiburg) Flexible micro-implants for neuroprosthetics and bioelectronics medicine. Neural Prosthesis Live Webinar, 14.01.2021, Cleveland FES Center & Case Western Reserve University (2021).
 21. Stieglitz, T., (uni Freiburg) “Flexible-Bioelectronics-Microimplants for Neuroprosthetic and Bioelectronic Medicine Applications.” innoLAE-Innovations in Large Area Electronics, ONLINE Feb 23rd to 25th, invited lecture and panel discussion (2021)
 22. V. Giagka, "Microelectronic chips for bioelectronic medicines", at DSP Valley - EURO PRACTICE virtual event "Lowering the barrier for customized microsystems in medical applications", March 24, 2021. Link: <https://youtu.be/1AHlfoZMVBo?t=3150>
 23. The 27th of May 2021 Ruurd Boomsma from BESI Austria gave a webinar, “Hybrid wafer-scale and die-level integration in microfluidics: packaging and integration of micro/nanostructures, sensors and other microdevices,” Advanced placement of silicon elements and microelements. Organization: Microfluidics Association (MFA) [Doc_224]
 24. Shinnosuke Kawasaki, et al. “Pre-Charged Collapse-Mode Capacitive Micromachined Ultrasonic Transducer (CMUT) for Broadband Ultrasound Power Transfer,” 2021 IEEE Wireless Power Transfer Conference (<https://wptc-ieee.org/>) Date: June 1-4 [Doc_167]
 25. Shinnosuke Kawasaki, et al. “Schlieren visualization of focused ultrasound beam steering for spatially specific stimulation of the vagus nerve,” The 10th International IEEE EMBS Conference on Neural Engineering (NER) of

-
- the IEEE Engineering in Medicine and Biology Society (<https://neuro.embs.org/2021/>),
Date: May 4 – 6 [Doc_167]
26. Rossi, S.; Boni, (University of Firenze) E. Embedded GPU Implementation for High-Performance Ultrasound Imaging. *Electronics* 2021, 10, 884. <https://doi.org/10.3390/electronics10080884>, [Doc_168]
 27. F. Guidi and P. Tortoli, Real-Time High Frame Rate Color Flow Mapping System, *IEEE Trans. Ultrason. Ferroelectr. Freq. Control*, pp. 1–1, 2021, doi: 10.1109/TUFFC.2021.3064612, The journal *IEEE Trans. Ultrason. Ferroelectr. Freq. Control*. [Doc_168]
 28. Microfluidic ChipShop showed results from the Moore4Medical project at the Lab-on-a-Chip and Microfluidics 2021, Organoids & Organs-on-Chips 2022, Point-of-Care Diagnostics and Biosensors 2021, (Select Biosciences), San Diego, USA, 12th – 15th of December 2021
 29. Abidin, Aysajan & Soussi, Mohieddine & Romme, Jac & Boer, Pepijn & Singelée, Dave & Bachmann, Christian. (IMEC-NL). “Secure, Accurate, and Practical Narrow-Band Ranging System,” *Transactions on Cryptographic Hardware and Embedded Systems*. 2021. doi:10.46586/tches.v2021.i2.106-135.
 30. I. Essop, J.C. Ribeiro, M. Papaioannou, G. Zachos, G. Mantas, J. Rodriguez, "Generating Datasets for Anomaly-Based Intrusion Detection Systems in IoT and Industrial IoT Networks", *Sensors*, 2021, 21(4):1528. <https://doi.org/10.3390/s21041528>

Year 2

Items printed in **bold** are peer-reviewed.

1. **D. Mazierli, A. Ramalli, E. Boni, F. Guidi and P. Tortoli University Florence, "Architecture for an Ultrasound Advanced Open Platform With an Arbitrary Number of Independent Channels," in IEEE Transactions on Biomedical Circuits and Systems, vol. 15, no. 3, pp. 486-496, June 2021, doi: 10.1109/TBCAS.2021.3077664. [Doc_172]**
2. **S.Rossi, A.Ramalli, P.Tortoli (2021) University Florence, “On the depth-dependent accuracy of plane-wave based vector velocity measurements with linear arrays” in IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, early access, DOI: 10.1109/TUFFC.2021.3076284. [Doc_172]**
3. Frank v.d. Scheur held a Keynote presentation at the IVAM online Hightech Symposium 25-26 August 2021 “Micro and Nanotechnologies as Enablers for future Healthcare,” [Doc_173]
4. **Bußmann, A.; Leistner, H.; Zhou, D.; Wackerle, M.; Congar, Y.; Richter, M.; Hubbuch, J. Piezoelectric Silicon Micropump for Drug Delivery Applications. *Appl. Sci.* 2021, 11, <https://doi.org/10.3390/app111780> Website: <https://www.mdpi.com/2076-3417/11/17/8008/htm> [Doc_174]**
5. C. O’Mahony, “Emerging Technologies For Intelligent Delivery And Diagnostics”, *SMI Wearable Injectors and Connected Devices Conference*, online, 18-19th October 2021 [Doc_177]
6. C. O’Mahony, “Smart drug delivery and diagnostics systems, *Tyndall-UCD Research Workshop*, online, 6th October 2021. [Doc_177]
7. **G. Zachos, I. Essop, G. Mantas, K. Porfyraakis, J. C. Ribeiro, and J. Rodriguez, "An anomaly-based intrusion detection system for internet of**

- medical things networks," *Electronics* 10, no. 21, 2021. DOI: 10.3390/electronics10212562.
8. M de Ree, D. Vizar, G. Mantas, J. Bastos, C. Kassapoglou-Faist, and J. Rodriguez, "A Key Management Framework to Secure IoMT-enabled Healthcare Systems," in *Proceedings of the 2021 IEEE International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (CAMAD)*, Virtual Conference, 25-27 October 2021. DOI: 10.1109/CAMAD52502.2021.9617796
 9. M. Papaioannou, J. Ribeiro, V. Monteiro, V. Sucasas, G. Mantas, and J. Rodriguez, "A Privacy-Preserving User Authentication Mechanism for Smart City Mobile Apps," in *Proceedings of the 2021 IEEE International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (CAMAD)*, Virtual Conference, 25-27 October 2021. DOI: 10.1109/CAMAD52502.2021.9617809.
 10. F. Pelekoudas Oikonomou, J. Ribeiro, G. Mantas, J. M. C.S. Bastos, J. Rodriguez, "A Hyperledger Fabric-based Blockchain Architecture to Secure IoT-based Health Monitoring Systems," in *Proceedings of the 2021 IEEE International Mediterranean Conference on Communications and Networking (Meditcom)*, Hybrid: In-Person (Athens, Greece) and Virtual Conference, 7-10 September 2021 DOI: 10.1109/MeditCom49071.2021.9647521.
 11. G. Zachos, I. Essop, G. Mantas, K. Porfyraakis, J. C. Ribeiro, and J. Rodriguez, "Generating IoT Edge Network Datasets based on the TON_IoT Telemetry Dataset," in *Proceedings of the 2021 IEEE International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (CAMAD)*, Virtual Conference, 25-27 October 2021. DOI: 10.1109/CAMAD52502.2021.9617799
 12. A. I. Velea, J. Wilson, A. Pak, M. Seckel, S. Schmidt, S. Kosmider, N. Bakhshae, W. A. Serdijn and V. Giagka, "UV and IR laser-patterning for high-density thin-film neural interfaces," in *Proc. IEEE European Microelectronics and Packaging Conference (EMPC) 2021*, Online, Sep. 2021
https://www.researchgate.net/publication/355370021_UV_and_IR_Laser-Patterning_for_High-Density_Thin-Film_Neural_Interfaces [Doc_178]
 13. L. Grünerbel, B. Leikam , G. Schrag (Fraunhofer emft), "Experimental Characterization Method for Passive Microvalves in Diaphragm Pumps for Medical Applications," *MikroSystemTechnik Kongress 2021 · 8. – 10. November 2021, Stuttgart-Ludwigsburg* [Doc_180].
 14. Agnes Bußmann, Thomas Thalhofer, Leopold Daum, Martin Richter and Oliver Hayden, "Cell transport using piezoelectric micro diaphragm pumps," *MikroSystemTechnik Kongress 2021 · 8. – 10. November 2021, Stuttgart-Ludwigsburg* [Doc_180].
 15. Ronald Dekker, "Accelerating innovation in smart medical devices, enabling Moore for Medical," keynote speech at the Semicon Europe Executive Forum, session "Enabling Next Generation Applications" Nov 15-18, 2021, Messe München, Germany <https://www.semiconeuropa.org/program/executive-forum> [Doc_181]
 16. Eckardt Bihler (Dyconex), "biocompatible LCP substrate technology," Webinar 4th Nov 2021, <https://www.mst.com/news-and-events/webinars>
 17. A. Ramalli et al. "Synthetic transmit beams with multi-line and diverging wave transmission for real-time, high frame rate, low-artefact tissue Doppler imaging" presented at IUS 2021 published in the 2021 IEEE Int.l Ultrasonics Proceedings

- <https://doi.org/10.1109/IUS52206.2021.9593699> [Doc_182]
18. F.Guidi et al. “High-frame-rate color flow imaging with enhanced spatial resolution in virtual real-time” presented at IUS 2021 published in the 2021 IEEE Int.l Ultrasonics Proceedings <https://doi.org/10.1109/IUS52206.2021.9593479> [Doc_182]
 19. D.Mazierli et al. “Real-time ultrasound open platform with an extendable number of channels” presented at IUS 2021 published in the 2021 IEEE Int.l Ultrasonics Proceedings <https://doi.org/10.1109/IUS52206.2021.9593831> [Doc_182]
 20. P.Mattesini et al. “Comparative Assessment of Plane Wave Imaging with 256-element CMUT and Single Crystal Probes” presented at IUS 2021 published in the 2021 IEEE Int.l Ultrasonics Proceedings <https://doi.org/10.1109/IUS52206.2021.9593805> [Doc_182]
 21. L.Peralta et al. “Feasibility of 3-D Coherent Multi-Transducer Ultrasound Imaging with Two Sparse Arrays” presented at IUS 2021 published in the 2021 IEEE Int.l Ultrasonics Proceedings <https://doi.org/10.1109/IUS52206.2021.9593571> [Doc_182]
 22. Ballerini M., Jouybar M., Mainardi A., Rasponi M., Ugolini G.S. (2022) Organ-on-Chips for Studying Tissue Barriers: Standard Techniques and a Novel Method for Including Porous Membranes Within Microfluidic Devices. In: Rasponi M. (eds) Organ-on-a-Chip. Methods in Molecular Biology, vol 2373. Humana, New York, NY. [Doc_184] https://doi.org/10.1007/978-1-0716-1693-2_2
 23. Jouy Bar, M., Sleeboom, J. J. F., & den Toonder, J. M. J. (2021). Cancer metastasis on chip. Poster session presented at TERMIS 2021 [Doc_184]
 24. Jouy Bar, M., Sleeboom, J. J. F., & den Toonder, J. M. J. (2021). Breast cancer metastasis on a chip. Poster session presented at Annual Meeting European Organ-on-Chip Society 2021, EUROoCS Conference 2021, Uppsala, Sweden. [Doc_184]
 25. Bußmann, A.; Thalhafer, T.; Hoffmann, S.; Daum, L.; Surendran, N.; Hayden, O.; Hubbuch, J.; Richter, M. Microfluidic Cell Transport with Piezoelectric Micro Diaphragm Pumps. *Micromachines* 2021, 12, 1459. <https://doi.org/10.3390/mi12121459> [DOC_197]
 26. Saccher, M., Kawasaki, S., Onori, M.P. et al. Focused ultrasound neuromodulation on a multiwell MEA. *Bioelectron Med* 8, 2 (2022). <https://doi.org/10.1186/s42234-021-00083-7>
Video associated with it: Saccher, Marta; Kawasaki, Shinnosuke; Proietti Onori, Martina; van Woerden, Geeske M.; Giagka, Vasiliki; Dekker, Ronald (2021): Video recordings associated with the publication: Focused ultrasound neuromodulation on MEA. 4TU.ResearchData. Dataset. <https://doi.org/10.4121/17055329.v3>
 27. S. Kawasaki, I. Subramaniam, M. Saccher and R. Dekker, "A microwatt telemetry protocol for targeting deep implants," 2021 IEEE International Ultrasonics Symposium (IUS), 2021, pp. 1-4, doi: 10.1109/IUS52206.2021.9593603
 28. A. S. Savoia et al., “Design, Fabrication, Characterization, and System Integration of a 1-D PMUT Array for Medical Ultrasound Imaging,” in Proceedings IEEE International Ultrasonics Symposium, Sep. 2021, pp. 1–3. doi: 10.1109/IUS52206.2021.9593751.
 29. P. Mattesini, A. S. Savoia, A. Ramalli, F. Quaglia, P. Tortoli, and E. Boni, “Comparative Assessment of Plane Wave Imaging with 256-element CMUT and Single Crystal Probes,” in Proceedings IEEE International Ultrasonics Symposium, Sep. 2021, pp. 1–3. doi: 10.1109/IUS52206.2021.9593805.

30. M.M. de Kok (TNO/Holst), "Large-Area Sensing Surfaces and Human Machine Interfaces Enabled by Hybrid Printed Electronics," Invited, The International Conference on Flexible and Printed Electronics (ICFPE) 2021, Niigata, Japan, September 27, 2021.
31. M. Saccher, S. Kawasaki and R. Dekker, "The long-term reliability of pre-charged CMUTs for the powering of deep implanted devices," 2021 IEEE International Ultrasonics Symposium (IUS), 2021, pp. 1-4, doi: [10.1109/IUS52206.2021.9593683](https://doi.org/10.1109/IUS52206.2021.9593683)
Video associated with it: Saccher, Marta; Kawasaki, Shinnosuke; Dekker, Ronald (2021): Video recording associated with the publication: The long-term reliability of pre-charged CMUTs for the powering of deep implanted devices. 4TU.ResearchData. Dataset. <https://doi.org/10.4121/16635193.v1>
32. Stieglitz T., et al. (uni Freiburg) "Ansätze, Chancen und Grenzen von neurotechnischen Schnittstellen zum Gehirn." Neurowissenschaftliches Seminar, RWTH Universitätsklinikum Aachen, 11.01.2022, Aachen (2022).
33. Stieglitz, T., (uni Freiburg) "Wenn Technik den Nerv trifft: Strom und Neurotechnik – Science or Fiction ?" Schüler:innen Ingenieur Akademie, 29.01./04.02. und 11.11.2022, Freiburg (2022).
34. Stieglitz T., (uni Freiburg) "Miniaturized Neural Implants" in Translational Research. Organic Bioelectronics Conference, February 08th-09th, 2022, Online (2022).
35. Stieglitz T., et al. (uni Freiburg) "Neurotechnologische Implantate – Einsichten in Möglichkeiten und Grenzen". Seminar "Cyborgs-sind wir bereit für Human Enhancement ?" des Studienförderwerks Klaus Murmann der Stiftung der Deutschen Wirtschaft (sdw), 19.02.2022, Online (2022).
36. Stieglitz T., at al. (uni Freiburg) "Neurotechnologische Implantate – Einsichten in Möglichkeiten und Grenzen." Seminar "Cyborgs-sind wir bereit für Human Enhancement ?" des Studienförderwerks Klaus Murmann der Stiftung der Deutschen Wirtschaft (sdw), 19.02.2022, Online (2022).
37. Stieglitz T., at al. (uni Freiburg) "Translation of Miniaturized Neural Implants." BrainCom Workshop on "Novel Technologies for High-Density Brain Mapping", April 25th, 2022, Online (2022).
38. Ronald Dekker, "Accelerating Innovation in Medical Devices, Enabling Moore4medical," invited presentation in the research and Innovation committee of MedTech Europe, the presentation also makes references to the POSITION and Moore4Medical projects, 15th March 2022, online [Doc_187]
39. Szabo, B., et al. (uni Freiburg) "Coating Method for Micromachined Ultrasound Transducers - A Way Towards Integration of Ultrasonic Transducers to Power Deep-lying Neural Implants." Gordon Research Conference on Neuroelectronic Interfaces, March 13 – 18, 2022, Ventura. (Poster)
40. Szabo, B., Amado-Rey, A.B., Stieglitz, T., (uni Freiburg) "Requirements on ultrasound transducers in bioelectronics medicine applications." 48th Annual Conference on Acoustics DAGA 2022, March 21st – 24th, 2022, Stuttgart
41. Jouy Bar M, Sleeboom JJF & den Toonder JMJ. (TU Eindhoven), "Breast cancer metastasis on chip," Microphysiological systems from organoids to Organ-on-Chip. 11-15 Apr 2022, Cargèse, Corsica, France. Poster presentation [Doc_226]
42. Andrada Velea (Fraunhofer IZM) et al. "Towards a miniaturized cuff implant for highly selective US neuromodulation of peripheral nerves," presentation of BioEI winter school in Tirol, March 2022

43. M. Mastrangeli, “Microelectromechanical organ-on-chip devices and platforms” (Topic Keynote), 30th meeting of the Netherlands society for Biomaterials and Tissue Engineering (NBTE), Lunteren (NL), 5 April 2022
44. Ronald Dekker, “Accelerating Innovation in Medical Devices, Enabling Moore4medical,” Keynote and plenary presentation at the 2022 LOPEC conference, the world’s largest trade fair and congress on printed electronics, 24th March 2022, Munich. Apart from a presentation on the vision and mission of the Health.E lighthouse, the presentation also disseminated results from the Penta ULIMPIA and AMPERE projects and the ECSEL JU InforMed, POSITION and Moore4Medical projects [Doc_189] <https://lopec.com/en/>
45. On the 31st of March 2022, Ronald Dekker (Philips) gave a presentation in a Webinar organized by Ibec from Ireland. The Digital Healthtech webinar series is a joint initiative of Connected Health Skillnet, Tyndall National Institute, and the Irish Medtech Association. The presentation addressed the Health.E lighthouse initiative as well as results and goals from the ECSEL JU projects POSITION and Moore4Medical. [Doc_190] <https://www.ibec.ie/connect-and-learn/events/upcoming-events/2022/digital-health-tech-series/general-information>
46. **On the 27th of April 2022 Agnes Bußmann defended her PhD thesis performed at Fraunhofer EMFT in the context of the ECSEL JU projects POSITION and Moore4Medical on Silicon micropumps. She graduated summa cum laude! DOI: 10.5445/IR/1000145645 [Doc-191]**
47. **Konstantina Kolovou-Kouri, et al. (TUD & FIZM) “Energy Savings of Multi-Channel Neurostimulators with Non-Rectangular Current-Mode Stimuli Using Multiple Supply Rails,” paper and presentation for the IEEE EMBC in Glasgow in July 2022 <https://embc.embs.org/2022/> [Doc_193]**
48. Eckardt Bihler (Dyconex), “LCP substrate technology,” Webinar 28th April 2021, <https://www.mst.com/news-and-events/webinars>
49. Eckardt Bihler (Dyconex), “A Platform Technology for Paper Thin Bioelectronic Implants,” 29th March IMAPS Workshop for medical applications in San Diego.[Doc_195]
50. **M.M. de Kok (TNO/Holst), “Large-Area Sensing Surfaces and Human Machine Interfaces Enabled by Hybrid Printed Electronics,” Invited, MEMS Engineer Forum 2022, Tokyo, Japan, April 20, 2022**
51. Clavier, G.; Karewar, S.; van der Sluis, O.; Geers, M.; Hoefnagels, J. **Molecular simulation for the prediction of residual stress of (ultra-thin) films during deposition. European Materials Research Society (E-MRS) Spring Meeting 2022 (May 30 – June 3). <https://www.european-mrs.com/meetings/2022-spring-meeting-0> [Doc_208]**
52. **Jouy Bar M & den Toonder JM.J. (TU Eindhoven), “Lumen-based microfluidics for cancer-on-chip devices,” TERMIS-EU2023, 28-31 Mar 2023, Manchester, United Kingdom. Poster presentation [Doc_226]**
53. Stieglitz T., at al. (uni Freiburg) “Flexible miniaturized electrode arrays as interfaces to the nervous system.“ Innovative Retinal Interfaces for Optimized Artificial - InnoRetVision, DFG Research Training Group RTG 2610, May 5th, 2022, Duisburg (2022).
54. Stieglitz, T. (uni Freiburg) “Bioelektronische Medizin – Neue Ansätze oder alter Wein in neuen Schläuchen ?,” VDE Veranstaltungsreihe “Zukunft der Biomedizinischen Technik” des Bezirksverbands West des VDE in Kooperation mit der DGBMT, 17.05.2022, Online (2022).
55. Stieglitz, T., (uni Freiburg) “Klinische Prüfungen bei Medizinprodukten: Translation aus der Forschung.”VDE Online Fachveranstaltung “Klinische Prüfung von Medizinprodukten, 25.05.2022, Online (2022).

56. Microfluidic ChipShop showed results of the Moore4Medical project at the Lab-on-a-Chip and Microfluidics Europe 2022, Point-of-Care, Biosensors and Mobile Diagnostics Europe 2022, and Organoids and Organs-on-Chips Europe 2022 (Select Biosciences), Rotterdam, The Netherlands, 21st – 22nd of June 2022
57. **C. Zebiri, M.L. Bouknia, D. Sayad, I. Elfergani, M.H. Aly, P. Yupapin, S. Boonkirdram, A. Desai, J. Rodriguez**, "Gyrotropic reciprocal bianisotropic metamaterial printed dipole antenna: Investigation of negative input impedance and mutual coupling", *Alexandria Engineering Journal*, Volume 61, Issue 12, 2022, pp. 11677-11685, ISSN 1110-0168.
58. **C. Zebiri, M.L. Bouknia, D. Sayad, et al.**, "Negative input impedance of a dipole antenna printed on a grounded tellegen metamaterial substrate", *Wireless Netw.* 28, pp. 2237–2254, 2022. <https://doi.org/10.1007/s11276-022-02962-6>.
59. **S. Mosbah, C. Zebiri, D. Sayad, I. Elfergani, M.L. Bouknia, S. Mekki, R. Zegadi, M. Palandoken, J. Rodriguez, R.A. Abd-Alhameed**, "Compact and Highly Sensitive Bended Microwave Liquid Sensor Based on a Metamaterial Complementary Split-Ring Resonator", *Appl. Sci.* 2022, 12, 2144. <https://doi.org/10.3390/app12042144>.
60. Partner Inesc MN presented a poster at the MMM conference 2022, Minneapolis, MN - USA (31 October - 4 November): Strong Perpendicular Magnetic Anisotropy in Co/Pt and Co/Pd Synthetic Antiferromagnets M. Caseiro, R. Macedo, P. Araújo, S. Cardoso, M. Erkovan, P. P. Freitas <https://www.linkedin.com/feed/update/urn:li:activity:6996074931620859904>
61. **A. Romanenko, B. Kalas, P. Hermann, O. Hakkel, L. Illés, M. Fried, P. Fürjes, G. Gyulai, P. Petrik**, Membrane-Based In Situ Mid-Infrared Spectroscopic Ellipsometry: A Study on the Membrane Affinity of Polylactide-co-glycolide Nanoparticulate Systems, *Anal. Chem.* 2021, 93, 2, 981–991 (IF: 6.785)

Year 3

Items printed in **bold** are peer reviewed.

1. **A. Ramalli et al.** "Design, implementation, and medical applications of 2-D ultrasound sparse arrays" *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, DOI 10.1109/TUFFC.2022.3162419, [Doc_201]
2. M. Mastrangeli, "Open technology platforms for organs-on-chip" (Talk), 6th Annual hDMT consortium meeting, Amersfoort (NL), 25 November 2022
3. Partner Inesc MN presented at the open day at Técnico-Taguspark, 12 November 2022 (INESC MN research was presented with a stand titled "Magnetism and Biosensors" that showcased some of our ongoing projects) <https://tecnico.ulisboa.pt/pt/eventos/dia-aberto-tecnico-taguspark/>
4. **C. Giangrossi et al.** "Requirements and Hardware Limitations of High-Frame-Rate 3-D Ultrasound Imaging Systems", *Applied Sciences* June 2022, <https://doi.org/10.3390/app12136562> [Doc_201]
5. **L. Novaresi et al. (uni Pavia)** "A PMUT Transceiver Front-End with 100-V TX Driver and Low-Noise Voltage Amplifier in BCD-SOI Technology", *European Solid-State Circuits Conference (ESSCIRC)*, 2022

6. Master student Claudia Durasiewicz (Fraunhofer emft) publically defended her dissertation “Development of a Metal-Based Microfluidic MEMS Platform for Medical Applications” on December 12th 2022
7. Master student Thomas Thalhofer (Fraunhofer emft) publically defended his dissertation “Mikropumpenbasiertes Dosiersystem mit kapazitiver Flusssensorik für nuklearmedizinische Anwendungen“ on November 17th 2022
8. Master student Lorenz Grünerbel (Fraunhofer emft) publically defended his dissertation “Experimental and Theoretical Methodologies for High-Flow Optimization of Micropumps in Medical Applications” on November 30th 2022
9. P. Fürjes, Microsystems for biomedical applications, Balluff Expert Presentations, online, 2023, (invited lecture)
10. **M.L. Bouknia, R. Zegadi, D. Sayad, C. Zebiri, I. Elfergani, J. Rodriguez, I. Otung, R.A. Abd-Alhameed, "A compact simple circular disk printed monopole Antenna for multiple applications", IEEE 27th International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (CAMAD 2022), 2-3 Nov. 2022, Paris, France.**
11. L. Novaresi et al. (uni Pavia) “Acquisition RX Chain for PMUT-Based Highly Integrated Ultrasound Imaging Systems”, International Conference on PhD Research in Microelectronics and Electronics (PRIME), 2022
12. **L. Novaresi et al. (uni Pavia) “ A PMUT Transceiver Front-End with 100 V TX Driver and Low-Noise Voltage Amplifier in BCD-SOI Technology” (poster), Congresso Nazionale di Misure Elettriche ed Elettroniche (GMEE), 2022**
13. Agnes Bussman from Fraunhofer emft presented a talk on “Microfluidic Devices for Medical Application” on the MedtechSUMMIT - Congress & Partnering (23 - 25 May 2023) at MedtecLIVE with T4M, NürnbergMesse in Nürnberg ([Link](#)) [[Doc_231](#)]
14. Paul Galvin (Tyndall) presented results from the smart drug delivery work in Moore4Medical at the 18th National Conference on Health Economy 6-8 June in Rostock, Germany
15. Ronald Dekker (Philips), “Organ-on-Chip, and lessons learned from the semiconductor industry,” Keynote speech at the 2022 [EUROoCS Organ-on-Chip conference](#), 4-5 July 2022 Grenoble, [[Doc_202](#)]
16. Stieglitz, T., (uni Freiburg) “Strom statt Pillen – neue Konzepte des Einsatzen von Strom in Behandlung und Rehabilitation.” Rotary Club Emmendingen-Breisgau, 25.07.2022, Kenzingen (2022).
17. **Clara Bayona et al. (University of Zaragoza), “Decoding Glioblastoma: simulating tumor microenvironment to detect novel biomarkers using organ-on-chip models,” oral presentation at the 2022 [EUROoCS Organ-on-Chip conference](#), 4-5 July 2022 Grenoble, [[Doc_202](#)].**
18. **Claudia Olaizola Rodrigo et al. (Beonchip) “Novel fabrication technique to confine hydrogels with different patterns inside microfluidic devices without pillars,” oral presentation at the 2022 [EUROoCS Organ-on-Chip conference](#), 4-5 July 2022 Grenoble, [[Doc_202](#)].**
19. **Sandro Meucci et al. (Micronit) “Smart Mult-Well Plate: an autonomous modular and scalable OoC platform,” oral presentation at the 2022 [EUROoCS Organ-on-Chip conference](#), 4-5 July 2022 Grenoble, [[Doc_202](#)].**
20. **Alfredo Mameli et al. (TNO/Holst) “Flar panel display technology as the enabler for organ-on-chip commercialization,” poster presentation at the 2022 [EUROoCS Organ-on-Chip conference](#), 4-5 July 2022 Grenoble, [[Doc_202](#)].**

21. Simon Hutter et al. (InSphero) “High-Throughput Multi-Tissue Culturing from 3D Spheroids,” poster presentation at the 2022 EUROoCS Organ-on-Chip conference, 4-5 July 2022 Grenoble, [Doc_202].
22. Bjorn de Wagenaar et al. (TU/e) “Integrated and tubeless pumping in an Organ-on-Chip multi-well plate,” poster presentation at the 2022 EUROoCS Organ-on-Chip conference, 4-5 July 2022 Grenoble, [Doc_202].
23. Lisa Hoelting et al. (InSphero) “Recapitulating insulin resistance in a 3D human liver model for its application in multi-tissue MPS,” poster presentation at the 2022 EUROoCS Organ-on-Chip conference, 4-5 July 2022 Grenoble, [Doc_202].
24. Mohammad Jouybar et al. (TU/e) “Fabrication of lumens on chip towards a cancer microenvironment mimicry,” poster presentation at the 2022 EUROoCS Organ-on-Chip conference, 4-5 July 2022 Grenoble, [Doc_202].
25. Fabien Abeille et al. (Micronit) “Scalable manufacturing for a high-density electrophysiology well-plate for heart-on-chip,” poster presentation at the 2022 EUROoCS Organ-on-Chip conference, 4-5 July 2022 Grenoble, [Doc_202].
26. Peter Zalar, et al. (TNO/Holst), “ Screen-Printed Dry Electrodes: Basic Characterization and Benchmarking,” *Advanced Engineering Materials*, July 2022, <https://doi.org/10.1002/adem.202000714>
27. Konstantina Kolovou-Kouri (TU/e), “Energy Savings of Multi-Channel Neurostimulators with Non-Rectangular Current-Mode Stimuli Using Multiple Supply Rails,” Conference presentation and paper at the IEEE 44th International Engineering in Medicine and Biology Conference, Glasgow, 2022, [Doc_203] <https://embc.embs.org/2022/>
Paper available as open access [here](#)
28. Ronald Dekker, “Organ-on-Chip: and lessons learned from the semiconductor industry,” Keynote speech, 2nd Workshop on Next Gen Organ-on-Chip & Organoids, 23-24 August, Campus Biotech, Chemin des Mines 9, 1202 Genève, Switzerland. ([Link](#)) [Doc_204]
29. Thalhafer T, Keck M, Kibler S, Hayden O (2022) Capacitive Sensor and Alternating Drive Mixing for Microfluidic Applications Using Micro Diaphragm Pumps. *Sensors (Basel, Switzerland)*. *Sensors* 2022, 22(3), 1273 [Doi:10.3390/s22031273](https://doi.org/10.3390/s22031273) [Doc_206]
30. A. Amroun, C. Zebiri, D. Sayad, I. Elfergani, A. Desai, M.L. Bouknia, R. Zegadi, J. Rodriguez, “Miniaturized Six Ring Elliptical Monopole-Based MIMO Antenna for Ultra-Wide Band Applications”, *International Journal of Communication Systems*, Wiley, 06-2023, DOI: 10.1002/dac.5557.
31. L. Gruenerbel, B. Leikam and G. Schrag, “Experimental Characterization Method for Passive Microvalves in Diaphragm Pumps for Medical Applications,” *MikroSystemTechnik Congress 2021; Congress, 2021*, pp. 1-4. [Doc_206]
32. R. Sebastian, T. Guillerm, F. Tjulkins, Y. Hu, A. James P. Clover, A. Lyness and C. O’Mahony, “A Comparison of Flow- and Pressure-Controlled Infusion Strategies for Microneedle-based Transdermal Drug Delivery”, *44th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (IEEE EMBC 2022)*, Glasgow, Scotland, July 11-15th 2022 [Doc_208]
33. F. Tjulkins, R. Sebastian, T. Guillerm, A. J. P. Clover, Y. Hu, A. Lyness and C. O’Mahony, “Towards Micropump- and Microneedle-based Drug Delivery using Micro Transdermal Interface Platforms (MicroTIPs)”, *44th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (IEEE EMBC 2022)*, Glasgow, Scotland, July 11-15th 2022. [Doc_208]

34. C. O'Mahony, "Transdermal Technologies for Minimally Invasive Theranostics", Invited, *Sensors International*, Brussels, 28-29th June 2022. [Doc_208]
35. R. Sebastian, I. Slimi, A. Bocchino, F. Tjulkins, A. James P. Clover and C. O'Mahony, "Microneedle And Micropump Systems For Interstitial Fluid Sampling", *Perspectives in Percutaneous Penetration (PPP 2022)*, La Grande Motte, France, April 19-22nd 2022. [Doc_208]
36. C. O'Mahony, R. Sebastian, F. Tjulkins, A. James P. Clover, Y. Hu and A. Lyness, "Microneedle-Based Drug Delivery Using Micro Transdermal Interface Platforms (MicroTIPS)", *Perspectives in Percutaneous Penetration (PPP 2022)*, La Grande Motte, France, April 19-22nd 2022. [Doc_208]
37. **C. O'Mahony, "Micro Transdermal Interface Platforms (MicroTIPs) for Drug Delivery and Diagnostics", International Conference on Emerging Technologies in Transdermal Drug Delivery, Naples, Italy, April 17-19th 2023. Keynote presentation**
38. C. O'Mahony, "Micro Transdermal Interface Platforms (MicroTIPs) for Drug Delivery and Diagnostics", Invited Seminar, CEA Leti, 3rd February 2023
39. P. Fürjes, *Microsystems for biomedical applications*, Balluff Expert Presentations, online, 2023, (invited lecture)
40. **Diogo Miguel Caetano, Ruben Afonso, Ana Rita Soares, João Silva, Hanna Iva Busse, Vania Silverio, Taimur Rabuske, Gonçalo N. Tavares, Jorge Ribeiro Fernandes and Susana Cardoso, "Artificial Neural Networks for GMR-Based Magnetic Cytometry", IEEE Transactions on Instrumentation and Measurement (Volume: 72), 13 Feb. 2023. <https://doi.org/10.1109/TIM.2023.3244208> <https://ieeexplore.ieee.org/document/10042449>**
41. M. Naseer, B. S. Prabakaran, O. Hasan, M. Shafique, "UnbiasedNets: A Dataset Diversification Framework for Robustness Bias Alleviation in Neural Networks", Springer - Machine Learning, 2023. DOI: <https://doi.org/10.1007/s10994-023-06314-z>
42. M. Naseer, M. Shafique, "Poster: Link between Bias, Node Sensitivity and Long-Tail Distribution in trained DNNs", IEEE Conference on Software Testing, Verification and Validation (ICST) 2023. DOI: <https://doi.org/10.1109/ICST57152.2023.00054>
43. E. Ostrowski, B. S. Prabakaran, M. Shafique, "SILOP: An Automated Framework for Semantic Segmentation Using Image Labels Based on Object Perimeters", IEEE International Joint Conference on Neural Networks (IJCNN) 2023. (Pre-print: <https://arxiv.org/abs/2303.07892>).
44. B. S. Prabakaran, P. Hamelmann, E. Ostrowski, M. Shafique, "FPUS23: An Ultrasound Fetus Phantom Dataset with Deep Neural Network Evaluations for Fetus Orientations, Fetal Planes, and Anatomical Features", IEEE Access 2023. (Accepted, Pre-print: <https://arxiv.org/abs/2303.07852>, DOI: <https://doi.org/10.1109/ACCESS.2023.3284315>).
45. M. Ahmadi, L. Arahis, O. Sinanoglu, M. Shafique, "FPGA-Patch: Mitigating Remote Side-Channel Attacks on FPGAs using Dynamic Patch Generation", ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED) 2023. (Accepted, Pre-print: <https://arxiv.org/abs/2304.02510>).
46. S. Kawasaki, J. Yeh, M. Saccher, J. Li and R. Dekker, "Bulk Acoustic Wave Based Mocrfluidic Particle Sorting with Capacitive Micromachined Ultrasonic Transducers," 2022 IEEE 35th International Conference on Micro

- Electro Mechanical Systems Conference (MEMS), 2022, pp. 908-911, doi: 10.1109/MEMS51670.2022.9699807
47. Ronald Dekker, "Accelerating innovation in smart medical devices, Enabling MooreforMedical," Presentation for a large group in international visitors to HealthHolland, 29th of September 2022, location Technical University of Eindhoven [Doc_210]
 48. Szabo, B., Diaconescu, R., Stieglitz, T. (uni Freiburg) "Powering Deep-seated Neural Implants by Ultrasound." Joint Annual Conference of the Austrian, German and Swiss Societies for Biomedical Engineering (BMT 2022), September 28th – 30th, 2022, Innsbruck
 49. Tokihiko Shimura et al. (TNO/Holst) "Engineering the Comfort-of-Wear for Next Generation Wearables," Advanced Electronic Materials October 2022 <https://onlinelibrary.wiley.com/doi/full/10.1002/aelm.202200512>
 50. Stieglitz T., et al. (uni Freiburg) "The Material-Tissue Interface is Key to Bioelectronic Implant Performance." Dept. Engineering, University of Cambridge, Sept. 7th, 2022, Cambridge, UK (2022).
 51. Stieglitz T., et al. (uni Freiburg) "Minaturized Neural Implants How does Size Matter ?" Vis a vis with the brain-The Neuron Glia Interface Workshop, Sept 9th, 2022, Freiburg (2022).
 52. Stieglitz, et al. (uni Freiburg) "Über den Einsatz mathematischer Modelle bei der kontinuierlichen Bestimmung der Gefäßsteifigkeit und des Blutdrucks mit Hilfe von Ultraschall." 13. Kongress für Arterielle Gefäßsteifigkeit, 17.-19.09.2022, Schwerin (2022).
 53. Microfluidic ChipShop gave a presentation at the Lab-on-a-Chip and Microfluidics Asia 2022, 3D-Bioprinting, Biofabrication, Organoids & Organs-on-Chips Asia 2022, (Select Biosciences), Tokyo, Japan, 6th – 7th of October 2022.
 54. Stieglitz T., et al. (uni Freiburg) "The Material-Tissue Interface is Key to Bioelectronic Implant Performance." Massachusetts Institute of Technology, MIT NanoBio Seminar, Oct. 19th, 2022, Online (2022)
 55. Henneken, Lukas: Haftungsuntersuchung von MED 1000 und Lötverbindungen auf Al₂O₃ sowie Pt-Dünnschichtmetallisierung. Bachelor Thesis, Albert-Ludwigs-Universität Freiburg, October 2022
 56. Stieglitz, T., et al. (uni Freiburg) "Neural Microimplants in Fundamental and Translational Research". IEEE Brain Discovery Neurotechnology Workshop — Brain Mind Body Cognitive Engineering for Health and Wellness, Nov. 10th-11th, 2022, San Diego/Online (2022)
 57. Lukas Holtzapfel (Fraunhofer IZM) et al., "A Robust Backscatter Modulation Scheme for Continuous Ultrasound Data Transfer from Deep Implants," poster at the 2022 International Ultrasonics Symposium IUS, 10-13 October 2022, Venice [Doc_212]
 58. A. Savoia, L. Novaresi et al. (uni Pavia) "A 4-channel Fully Integrated Ultrasound Imaging Front-End Transceiver for 1-D PMUT Arrays", IEEE International Ultrasonics Symposium (IUS), 2022
 59. A. S. Savoia et al., "A 4-channel Fully Integrated Ultrasound Imaging Front-End Transceiver for 1-D PMUT Arrays," in Proceedings IEEE International Ultrasonics Symposium, Oct. 2022, pp. 1–4. doi: 10.1109/IUS54386.2022.9958896.
 60. A. S. Savoia, D. Giusti, M. A. Shaw, M. Ferrera, and F. Quaglia, "Ultrasound Transmission Through the Back Cavities of Piezoelectric Micromachined Ultrasonic Transducer (PMUT) Arrays," in Proceedings IEEE International Ultrasonics Symposium, Oct. 2022, pp. 1–4. doi: 10.1109/IUS54386.2022.9958888.

61. On the 13th and 14th of November 2022 Agnes Bussman and Martin Richter from Fraunhofer emft presented their work on micropumps on the Compamed fair in Düsseldorf. They showcased the smart well plate of the Moore4Medical in their display [Doc_214]
62. **M. Saccher, S. S. Lolla, S. Kawasaki and R. Dekker, "Time-efficient low power time/phase-reversal beamforming for the tracking of ultrasound implantable devices," 2022 IEEE International Ultrasonics Symposium (IUS), 2022, pp. 1-4, doi: 10.1109/IUS54386.2022.9957652. [Doc_217]**
63. On the 8th of December 2022, Dr Massimo Mastrangeli from TUDelft and BI/OND gave a presentation on Moore4Medical at the Science and education festival in the "Van Nelle Fabriek" Rotterdam [Doc_218]
64. Stieglitz, T.: (uni Freiburg) "Academia and Industry in a Global Society-A view of translational research in MedTech". Academic Consortium 21, 20th Anniversary Workshop, Dec. 7th, 2022, Nagoya (2022).
65. Wienäcker, Marvin (uni Freiburg) ""Entwicklung und Charakterisierung eines Herstellungsprozesses von Wolfram-Titan- und Platindünnsfilm metallisierten Vias". Bachelor Thesis, Albert-Ludwigs-Universität Freiburg, December 2022
66. Microfluidic ChipShop gave a presentation at the Lab-on-a-Chip and Microfluidics World Congress, Point-of-Care & Rapid Diagnostics, Extracellular Vesicles, and Organoids & Microphysiological Systems 2022 (Select Biosciences), Long Beach, USA – 12th – 14th of December 2022
67. **R.Maffet et al. "Unfocused Field Analysis of a Density-Tapered Spiral Array for High-Volume-Rate 3D Ultrasound Imaging" IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, <http://dx.doi.org/10.1109/TUFFC.2022.3188245> [Doc_220]**
68. **Wei, L., Boni, E., Ramalli, A., Fool, F., Noothout, E., Van Der Steen, A. F. W., Verweij, M. D., Tortoli, P., De Jong, N., & Vos, H. J. (2022). Sparse 2-D PZT-on-PCB Arrays With Density Tapering. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 69(10), 2798-2809. <https://doi.org/10.1109/TUFFC.2022.3204118> [Doc_220]**
69. **C.Giangrossi et al. "Blood-flow volume estimation with bi-plane imaging" 2022 IEEE International Ultrasonics Symposium (2022) doi: 10.1109/IUS54386.2022.9957438 [Doc_220]**
70. **C. Peralta et al. "Experimental demonstration of the coherent use of two sparse arrays for 3-D imaging" 2022 IEEE International Ultrasonics Symposium (2022) doi: 10.1109/IUS54386.2022.9958667 [Doc_220]**
71. **Amin Rashidi, TUDelft, "Low-cost Shaping of Electrical Stimulation Waveforms for Bioelectronics Medicine with Improved Efficiency and Selectivity," 9th Dutch Bio-Medical Engineering (BME) Conference, January 2023 [Doc_221]**
72. **Mahum Naseer, "Link between Bias, Node Sensitivity and Long-Tail Distribution in trained DNNs", ICST, April 2023, Dublin, Ireland. (Linkedin)**
73. Eckhard Bihler from Dyconex, presented his poster " Long Term Reliability of Thin Film Electrodes Based on Liquid Crystal Polymer," at the North American Neuromodulation Society 26th Annual Meeting (NANS), 12-15 January, Las Vegas, Nevada, USA [Doc_222]
74. **M. Naseer, B. S. Prabakaran, O. Hasan, M. Shafique, "UnbiasedNets: A Dataset Diversification Framework for Robustness Bias Alleviation in Neural Networks", Springer - Machine Learning (Special Issue on Safe and Fair Machine Learning), 2023. <https://doi.org/10.1007/s10994-023-06314-z> pre-print: <https://arxiv.org/abs/2302.12538> [Doc_225]**

75. L. Novaresi et al. "A Bipolar 3-Level High-Voltage Pulser for Highly Integrated Ultrasound Imaging Systems", **IEEE Transactions on Circuits and Systems II: Express Briefs (TCAS-II), 2023**
76. Diaconescu, Radu (uni Freiburg), "A Computational Model of an Ultrasound Microtransducer for Biomedical Applications." Bachelor Thesis, Albert Ludwig University of Freiburg, March 2023
77. M.M. de Kok (TNO/Holst), "Elastomer-Based Printed Electronics Devices for Continuous Health Monitoring," Invited, 第34回研究会、東京大学「フレキシブル医療IT研究会 (34th Meeting of The University of Tokyo Flexible Medical IT Research Meeting), Tokyo, Japan, March 16, 2023
78. M. Saccher, (TU Delft) S. Kawasaki, J. H. Klootwijk, R. Van Schaijk and R. Dekker, "Modeling and Characterization of Pre-Charged Collapse-Mode CMUTs," in IEEE Open Journal of Ultrasonics, Ferroelectrics, and Frequency Control, vol. 3, pp. 14-28, 2023, doi: 10.1109/OJUFFC.2023.3240699. [Doc_227]
79. Peralta, D. Mazierli, A. Gomez, J. V. Hajnal, P. Tortoli and A. Ramalli, (UNIFI) "3-D Coherent Multitransducer Ultrasound Imaging With Sparse Spiral Arrays," in IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, vol. 70, no. 3, pp. 197-206, March 2023, doi: 10.1109/TUFFC.2023.3241774.
80. M. Mastrangeli, "Towards fully-electric and standardized organ-on-chip devices and platforms" (Invited talk), Organ-on-chip Centre Twente Symposium "The future is now", Enschede (NL), 30 May 2023 ([link](#)).
81. Jouybar M, Sleeboom JJF, Vaezzadeh Elnaz, Sahlgren CM, and den Toonder JMJ. (TU Eindhoven), "An in vitro model of cancer invasion with heterogeneous ECM created with droplet microfluidics," *Front in Lab on a Chip. Submitted*
82. M. Mastrangeli, "Towards fully-electric and standardized organ-on-chip devices and platforms" (Seminar), Microelectronics colloquium, Delft University of Technology, Delft (NL), 22 June 2023
83. M. Mastrangeli, "Towards fully-electric organs-on-chip" (invited talk), LIMNI Workshop: Lab on a Chip, KU Leuven, Leuven (BE), 5 July 2023
84. Erik Ostrowski, "SILOP: An Automated Framework for Semantic Segmentation Using Image Labels Based on Object Perimeters", IJCNN, July 2023, Gold Coast, Queensland, Australia
85. Eamonn Hawe, (Tyndall) "Digital healthtech underpinned by enabling technologies," NanoMed Europe, Liverpool 19-22 June 2023 <http://www.nme23.eu/> and
86. Sandro Meucci (Micronit) presented the work on the smart well plate at the Microfluidic Innovation Hub (MIH) in Enschede, The Netherlands, on the 15th of June 2023. ([link](#)).
87. **The Role of Mechanical Properties and Structure of Type I Collagen Hydrogels on Colorectal Cancer Cell Migration.** Hector Castro-Abril, Jónathan Heras, Jesús del Barrio, Laura Paz, Clara Alcaine, Marina Pérez Aliácar, Diego Garzón-Alvarado, Manuel Doblaré, Ignacio Ochoa. *Macromol Biosci.* 2 Jun 2023 <https://doi.org/10.1002/mabi.202300108>
88. Alfredo Mameli, et al. (TNO/Holst), "Beyond mobile phone displays: Flat panel display technology for biomedical applications," *Microelectronic Engineering*, 277 (2023), 112016, <https://doi.org/10.1016/j.mee.2023.112016>. (<https://www.sciencedirect.com/science/article/pii/S0167931723000813>)

89. Jouybar M, de Winde CM, Wolf K, Friedl P, Mebius R, den Toonder JMJ. (TU Eindhoven) "Cancer-on-chip models for tumor microenvironment," Trends Biotechnol. Editorial review article invitation. *Submitted*
90. A. Rashidi, (TUDelft) et al. "An ultrasonically power system using AlN PMUT receiver for the delivering instantaneous mW-range DC power to biomedical implants," in Proc. IEEE International Ultrasonics Symposium IUS, 3-8 Sept 2023, Canada
91. M. Saccher, (TUDelft) et al. "A comparative study of Si₃N₄ and Al₂O₃ as dielectric materials for pre-charged collapse mode CMUT," in Proc. IEEE International Ultrasonics Symposium IUS, 3-8 Sept 2023, Canada
92. M. Saccher, (TUDelft) et al. "phase distribution efficiency of cm-scale ultrasonically powered receivers," in Proc. IEEE International Ultrasonics Symposium IUS, 3-8 Sept 2023, Canada
93. A. Savoia, (Roma3) et al. "Evaluating the influence of PMUT mechanical support properties on power conversion efficiency in ultrasonically powered implants," in Proc. IEEE International Ultrasonics Symposium IUS, 3-8 Sept 2023, Canada
94. L. Holzapfel, (FIZM) et al. "Ultrasound for data transfers from deep implants: an experimental comparison between binary-frequency-shift-keying and on-off-keying with backscatter modulation," in Proc. IEEE International Ultrasonics Symposium IUS, 3-8 Sept 2023, Canada
95. S. Kawasaki, (TNO) et al. "Ultrasound imaging with pre-charged collapse mode CMUTs," in Proc. IEEE International Ultrasonics Symposium IUS, 3-8 sept 2023, Canada
96. R. van Schaijk, (Philips) et al. "Reliability of low-frequency CMUTs," in Proc. IEEE International Ultrasonics Symposium IUS, 3-8 Sept 2023, Canada
97. Philips published an extensive interview/background article related to the development of the pre-charged CMUTs in Moore4Medical on the Philips Engineering Solutions "Insights" page ([link](#)) [Doc_229]
98. Peter Zalar, et al. (TNO/Holst), "A Janus Molecule for Screen-Printable Conductive Carbon Ink for Composites with Superior Stretchability," Advanced Engineering Materials, 20th June 2023, <https://doi.org/10.1002/adem.202300706>
99. Mahya Morid Ahmadi, "FPGA-Patch: Mitigating Remote Side-Channel Attacks on FPGAs using Dynamic Patch Generation", ISLPED, October 2023, Vienna, Austria. (Accepted for presentation)
100. Mahya Morid Ahmadi, "Efficient Security for Emerging Computing Platforms: Side-channel Attacks and Defenses", IEEE/ACM Design Automation Conference (DAC) 2023. (Accepted, Ph.D. Forum Presentation)
101. D. Brennan, P. Galvin, "Evaluation of a machine learning algorithm to classify ultrasonic transducer misalignment" Eurosensors, Lecce, Italy,
102. J. Hoefnagels, G. Clavier, M. Geers, S. Karewar, O. van der Sluis. (TU/e) Minimum Energy Atomic Deposition: A novel, efficient atomistic simulation method for thin film growth. 17th European Congress and Exhibition on Advanced Materials and Processes - FEMS EUROMAT 2023, Highlight presentation (accepted)
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104. **A. Füredi, D. Bereczki, B. Gombos, I. Haffaressas, P. Szabó, P. Vajdovich, P. Fürjes: Point-of-Care Therapeutic Drug Monitoring of chemotherapy from microvolume blood samples with a specifically designed microfluidic system, 21st Congress of the International Association of Therapeutic Drug Monitoring & Clinical Toxicology, September 24 – 27 2023, Oslo, Norway (accepted for oral lecture)**
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