

INRiM Bibliography

Publications (2018-2023)

- [1] M. Gionso, L. Raspagliesi, L. Yuan, M. Del Bene, N. Corradino, R. Ciocca, E. Porto, A. D'Ammando, G. Durando, F. Di Meco, F. Prada, Focused Ultrasound for Brain Diseases: A Review of Current Applications and Future Perspectives, IRBM, 2023, Vol.44, No. 5, (100790)
- [2] A M. Ivory, R. de Melo Baesso, G. Durando, S. Rajagopal, P. Miloro, Development and Testing of a System for Controlled Ultrasound Hyperthermia Treatment With a Phantom Device, 2023, IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2023, Vol. 70, No.3, pp. 266–275
- [3] F. Foglietta, M. Macrì, P. Panzanelli, A. Francovich, G. Durando, F. Garello, E. Terreno, L. Serpe, R. Canaparo, Ultrasound boosts doxorubicin efficacy against sensitive and resistant ovarian cancer cells, European Journal of Pharmaceutics and Biopharmaceutics, 2023, Vol. 173, pp 119-131
- [4] L. Librizzi, L. Uva, L. Raspagliesi, M. Gionso, M.C. Regondi, G. Durando, F. Di Meco, M. de Curtis, F. Prada, Ultrasounds induce blood–brain barrier opening across a sonolucent polyolefin plate in an in vitro isolated brain preparation, Scientific reports, 2022, Vol. 12, No. 1, (2906)
- [5] G. Durando, F. Saba, L. Librizzi, L. Uva, L. Raspagliesi, M. Gionso, N. Corradino, R. Ciocca, M. de Curtis, M. Del Bene, F. Di Meco F. Prada, Blood-brain barrier opening across polyolefin plate, US characterization and in vitro results, 2022, Proceedings of the 24th International Congress on Acoustics ICA, 2022, Gyeongju (South Korea), 24-28 October 2022
- [6] F. Saba, G. Durando, M. Corallo, Qualification of free-field environments: a case study, 2022, Proceedings of the 24th International Congress on Acoustics ICA, 2022, Gyeongju (South Korea), 24-28 October 2022
- [7] F. Saba, D. Paesante, G. Durando, M. Corallo, An experimental setup for the metrological characterization of MEMS, 2022, Proceedings of the 24th International Congress on Acoustics ICA, 2022, Gyeongju (South Korea), 24-28 October 2022
- [8] F. Foglietta, G. Gola, E. Biasibetti, M.T. Capuchio, I. Bruni, A. Francovich, G. Durando, E. Terreno, L. Serpe, R. Canaparo, 5-aminolevulinic acid triggered by ultrasound halts tumor proliferation in a syngeneic model of breast cancer, Pharmaceuticals, 2021, Vol. 14 No.10, pp. 1-13
- [9] F. Foglietta, V. Pinelli, F. Giuntini, N. Barbero, P. Panzanelli, , G. Durando, E. Terreno, L. Serpe, R. Canaparo, Sonodynamic treatment induces selective killing of cancer cells in an in vitro co-culture model, Cancers, 2021, Vol 13 No.15, pp. 1-18
- [10] D'Ammando, L. Raspagliesi, M. Gionso, A. Franzini, E. Porto, F. Di Meco, G.Durando, S. Pellegatta, F. Prada, Sonodynamic therapy for the treatment of intracranial gliomas, Journal of Clinical Medicine, 2021,Vol. 10 No5, pp.1-16

- [11] F. Bosca, I. Corazzari, F. Foglietta, R. Canaparo, G. Durando, L. Pastero, S. Arpicco, F. Dosio, D. Zonari, G. Cravotto, S. Tagliapietra, L. Serpe, F. Turcibe, A. Barge, SWCNT-porphyrin nano-hybrids selectively activated by ultrasound: an interesting model for sonodynamic applications, *RSC Advances*, 2020, Vol. 10 No.37, pp. 21736-21744
- [12] F. Prada, C. Cogliati, M.AlessandraWu, G. Durando, N. Montano, I. G. Vetrano, F. Calliada, S. Bastianello, A. Pichieccchio, F. Padilla, Can Low-Intensity Pulsed UltrasoundT reat Discrete Pulmonary Lesions in Patients With COVID-19?, *Journal of Ultrasound in Medicine*, 2020, Vol. 40 no. 7, pp. 1445-1450
- [13] F. Bosca, F. Foglietta, A. Gimenez, R. Canaparo, G. Durando, I. Andreana, A. Barge, E. Peira, S. Arpicco, L. Serpe, B.Stella, Exploitinglipid and polymer nanocarriers to improve the anticancer sonodynamic activity of chlorophyll, *Pharmaceutics*, 2020, Vol. 12 No. 7, pp. 1-21
- [14] F. Boschi, P.R. Basso, I Corridori, G. Durando, A. Sandri, G. Segalla, M. Raspanti, A. E. Spinelli, Weak biophoton emission after laser surgery application in soft tissues: analysis of the optical features, *Journal of Biophotonics*, 2019, Vol. 12, No. 9, pp. 1-9
- [15] F. Giuntini, F. Foglietta, A. M. Marucco, A. Troia, N. V.Dezhkunov, A. Pozzoli, G. Durando, I. Fenoglio, L. Serpe, R. Canaparo, Insight into ultrasound-mediated reactive oxygen species generation by various metal-porphyrin complexes, *Free Radical Biology and Medicine*, 2018, Vol.121, pp. 190-201
- [16] Spinelli A.E., Durando G., Boschi F., Weak light emission of soft tissues induced by heating, *Journal of Biomedical Optics*, 2018, Vol. 23, No.4, pp. 46003 1-4
- [17] Landi, E., Prato, A., Fort, A., Mugnaini, M., Vignoli, V., Facello, A., Mazzoleni, F., Murgia, M., Schiavi, A. (2023). Highly Reliable Multicomponent MEMS Sensor for Predictive Maintenance Management of Rolling Bearings. *Micromachines*, 14(2), 376.
- [18] Prato, A., Romeo, R., Cuccaro, R., & Schiavi, A. (2022). Experimental determination of the dynamic elastic modulus of polymeric soft materials in an extended frequency range: A supported free loading-mass method. *Measurement*, 199, 111587.
- [19] A Schiavi, A., Prato, A., Pejrani, G., Facello, A., & Mazzoleni, F. Dynamic calibration system for seismometers: Traceability from 0.03 Hz up to 30 Hz. *Measurement: Sensors*, 2021, Vol. 18.
- [19] A Prato, F. Mazzoleni, G. D'Emilia, A. Gaspari, E. Natale, A. Schiavi, Metrological traceability of a digital 3-axis MEMS accelerometers sensor network, *Measurement: Journal of the International Measurement Confederation*, 2021, 109925.
- [20] A Prato, A., Mazzoleni, F., Schiavi, A. Traceability of digital 3-axis MEMS accelerometer: simultaneous determination of main and transverse sensitivities in the frequency domain. *Metrologia*, 2020, Vol. 57 No. 3
- [21] A Prato, A., Mazzoleni, F., & Schiavi, AEvaluation and correction of systematic effects in a simultaneous 3-axis vibration calibration system. *ACTA IMEKO*, 2020, Vol. 9 No. 5, pp. 388-393.

- [22] M. Galetto, A. Schiavi, G. Genta, A. Prato, F. Mazzoleni, "Uncertainty evaluation in calibration of low-cost digital MEMS accelerometers for advanced manufacturing applications", CIRP Annals Manufacturing Technology, 2019, 68, pp. 535-538.
- [23] A Schiavi, G. Cellai, S. Secchi, F. Brocchi, A. Grazzini, A. Prato, F. Mazzoleni, "Stone Masonry Buildings: Analysis Of Structural Acoustic And Energy Performance Within The Seismic Safety Criteria", Construction and Building Materials, 2019, 220, pp. 29-42.
- [24] G. D'Emilia, A. Gaspari, F. Mazzoleni, E. Natale, A. Schiavi, "Calibration of tri-axial MEMS accelerometers in the low-frequency range. Part 1: comparison among methods", Journal of Sensors and Sensor Systems, 2018, Vol. 7 No. 1, pp. 245-257.
- [25] G. D'Emilia, A. Gaspari, F. Mazzoleni, E. Natale, A. Schiavi, "Calibration of tri-axial MEMS accelerometers in the low-frequency range. Part 2: uncertainty assessment", Journal of Sensors and Sensor Systems, 2018, Vol. 7 No. 1, pp. 403-410.
- [26] A Prato, N. Montali, C. Guglielmone, A. Schiavi, "Pressure calibration of a digital microelectromechanical system microphone by comparison", Journal of the Acoustical Society of America, 2018 Vol. 144 No. 4.
- [27] G. D'Emilia, A. Gaspari, E. Natale, N. Montali, A. Prato, A. Schiavi, "Validated data mining technique: a case study on pressure-field digital MEMS microphone calibration", Journal of Physics: Conference Series, 2018, Vol. 1065. No. 7.
- [28] M. Argenziano, B. Bressan, A. Luganini, N. Finesso, T. Genova, A. Troia, G. Giribaldi, G. Banche, N. Mandras, A.M. Cuffini, R. Cavalli and Mauro Prato Comparative Evaluation of Different Chitosan Species and Derivatives as Candidate Biomaterials for Oxygen-Loaded Nanodroplet Formulations to Treat Chronic Wounds Mar. Drugs, 2021, Vol. 19, No. 112.
- [29] A Ancona, A. Troia, N. Garino, B. Dumontel, V. Cauda, G. Canavese Leveraging re-chargeable nanobubbles on amine-functionalized ZnO nanocrystals for sustained ultrasound cavitation towards echographic imaging Ultrasonics, Sonochemistry, 2020, Vol. 67.
- [30] M. Vassallo, D. Martella, G. Barrera, F. Celegato, M. Coïsson, R. Ferrero, E.S. Olivetti, A. Troia, H. Sözeri, C. Parmeggiani, D.S. Wiersma, P. Tiberto, and A. Manzin Improvement of Hyperthermia Properties of Iron Oxide Nanoparticles by Surface Coating, ACS Omega 2023, 8, 2, 2143–2154, January 4, 2023
- [31] Banche, G.; V. Allizond; Mandras, N.; Finesso, N.; Luganini, A.; Genova, T.; Argenziano, M.; Magnetto, C.; Gulino, Giulia R.; Roana, J.; Tullio, V.; Giribaldi, G.; Cavalli, R.; Spagnolo, R.; Troia, A.; Cuffini, A.M.; Prato, M. Antimicrobial oxygen-loaded nanobubbles as promising tools to promote wound healing in hypoxic human keratinocytes Toxicology Reports Volume 9, 2022, Pages 154-162
- [32] Kilian, D.; Kilian, W.; Troia, A.; Nguyen, T.D.; Ittermann, B.; Zilberti, L.; Gelinsky, M., 3D Extrusion Printing of Biphasic Anthropomorphic Brain Phantoms Mimicking MR Relaxation Times Based on Alginate-Agarose-Carrageenan Blends ACS Appl. Mater. Interfaces 2022, 14, 43,

- [33] Vighetto, V.; Troia, A.; Laurenti, M.; Carofiglio, M.; Marcucci, N.; Canavese, G.; Cauda, V., Insight into Sonoluminescence Augmented by ZnO-Functionalized Nanoparticles ACS Omega 2022, 7, 8, 6591–6600
- [34] Perego, F.; Ticozzi, R. M.; Troia, A.; Prato, M.; Taramelli, D.; Basilico, N. Dextran-shelled oxygen-loaded nanodroplets modulate macrophages killing and inflammatory response to Enterococcus faecalis European Journal of Pharmacology Volume 931, 15, 2022, 175161
- [35] Schiavi, A, Cuccaro, R. Troia, A. Functional mechanical attributes of natural and synthetic gel-based scaffolds in tissue engineering: strain-stiffening effects on apparent elastic modulus and compressive toughness, Journal of the Mechanical Behavior of Biomedical Materials Volume 126, 2022, 105066
- [36] Mandras, N; Argenziano, M; Prato, M; Roana, J; Luganini, A; Allizond, V; Tullio, V; Finesso, N; Comini, S; Bressan, Be; Pecoraro, F; Giribaldi, G; Troia, A; Cavalli, R; Cuffini, Am; Banche, G,Antibacterial and Antifungal Efficacy of Medium and Low Weight Chitosan-Shelled Nanodroplets for the Treatment of Infected Chronic Wounds Int J Nanomedicine. 2022; 17: 1725–1739.
- [37] A. Troia; S. Galati;V. Vighetto;V Cauda, Piezo/sono-catalytic activity of ZnO micro/nanoparticles for ROS generation as function of ultrasound frequencies and dissolved gases, Ultrasonics Sonochemistry Volume 97, July 2023, 106470
- [38] A. Troia, E.S. Olivetti, L. Martino, V. Basso Sonochemical hydrogenation of metallic microparticles, Ultrasonics – Sonochemistry, 2019, Vol. 55, pp 1–7.
- [39] V. Vighetto, A. Ancona, L. Racca , T. Limongi , A.Troia ,G.Canavese 1 and Valentina Cauda The Synergistic Effect of Nanocrystals Combined With Ultrasound in the Generation of Reactive Oxygen Species for Biomedical Applications Frontiers in Bioengineering and Biotechnology, 2019, Vol. 7, Article 374.

International conferences (2018-2023):

- [1] G. Durando, F. Saba, L. Librizzi, L. Uva, L. Raspagliesi, M. Gionso, N. Corradino, R. Ciocca, M. de Curtis, M. Del Bene, F. Di Meco F. Prada, Blood-brain barrier opening across polyolefin plate, US characterization and in vitro results, 2022, 24th International Congress on Acoustics ICA 2022, Gyeongju (South Korea), 24-28 October 2022
- [2] F. Saba, G. Durando, M. Corallo, Qualification of free-field environments: a case study, 2022, International Congress on Acoustics ICA 2022, Gyeongju (South Korea), 24-28 October 2022
- [3] F. Saba, D. Paesante, G. Durando, M. Corallo, An experimental setup for the metrological characterization of MEMS, 2022, 24th International Congress on Acoustics ICA 2022, Gyeongju (South Korea), 24-28 October 2022
- [4] Giovanni Durando, Piero Miloro, Volker Wilkens, Baki Karaboce, Jacco De Pooter, Gerard Van Rhoon, Gail ter Haar, Barbara Caccia, Antonello Spinelli, Antonia Denkowa, Roeland Dijkema, EURAMET EMPIR 18HLT06 RaCHy Project: Radiotherapy coupled with Hyperthermia (Induced by HITU), 23rd International Congress on Acoustics (ICA2019), Aachen Germany, 9-13/09/2019.
- [5] Giovanni Durando, Piero Miloro, Volker Wilkens, Baki Karaboce, Jacco De Pooter, Gerard Van Rhoon, Gail terHaar, Barbara Caccia, Antonello Spinelli, Antonia Denkowa, Roeland Dijkema, RaCHy - Radiotherapy Coupled with Hyperthermia- 18HLT06 EURAMET EMPIR Project, IEEE International Symposium on Medical Measurements and Applications (MeMeA), Istanbul, Turkey, 26-28/06/2019.
- [6] Prato, F. Mazzoleni, A. Schiavi, "Metrological traceability for digital sensors in smart manufacturing: calibration of MEMS microphones and accelerometers at INRiM", IEEE International Workshop on Metrology for Industry 4.0 and IoT, Naples, June 4 - 6, 2019.
- [7] Federica Palorini, Daniela Origgi, Marika Guernieri, Adriano Troia, Chiara Magnetto and Giovanni Durando, Measurements of temperature increase induced on a tissue- mimicking material by a clinical US- guided HIFU system, IEEE International Symposium on Medical Measurements and Applications (MeMeA), Torino Italy, 7-9/05/2015, pp. 112 – 116
- [8] Schiavi, A., Prato, A., Mazzoleni, F., Facello, A., & Kwitonda, A. (2022, October). Metrological characterization of digital mems accelerometers in dynamic conditions: an investigation of linearity in amplitude and temperature effects. In 5th TC22 Conference on Vibration Measurement 2022, Together with the 24th TC3 Conference on the Measurement of Force, Mass and Torque, the 14th TC5 Conference on the Measurement of Hardness, and the 6th TC16 Conference on Pressure and Vacuum Measurement, IMEKO 2022. Cavtat-Dubrovnik.
- [9] Schiavi, A., Mazzoleni, F., Facello, A., & Prato, A. (2023, June). Metrology for next generation "Phygital Sensors". In 2023 IEEE International Workshop on Metrology for Industry 4.0 & IoT (MetroInd4. 0&IoT) (pp. 90-95). IEEE.

- [10] Prato, A., Pennecchi, F. R., Genta, G., & Schiavi, A. (2022, June). Mixture distribution modelling of the sensitivities of a digital 3-axis MEMS accelerometers large batch. In 2022 IEEE International Workshop on Metrology for Industry 4.0 & IoT (MetroInd4. 0&IoT) (pp. 223-228). IEEE.
- [11] Schiavi, P. Iacomussi, L. Rossi, A. Prato, F. Mazzoleni, A. Facello, R. Signoretti, "On the trustworthiness of a digital 3D MEMS gyroscope subjected to wide frequency range dynamic accelerations for high precision ADAS applications", 2021 IEEE - International Workshop On Metrology For Automotive, July 1-2, 2021, Bologna, online.
- [12] Prato, F. Mazzoleni, F. R. Pennecchi, G. Genta, M. Galetto, A. Schiavi, "Towards large-scale calibrations: a statistical analysis on 100 digital 3-axis MEMS accelerometers", 2021 IEEE International Workshop on Metrology for Industry 4.0 and IoT, June 7-9, 2021, Roma, on-line.
- [13] G. D'Emilia, A. Gaspari, E. Natale, A. Prato, F. Mazzoleni, A. Schiavi, "Managing the intrinsic sampling rate variability of digital MEMS accelerometers in dynamic calibration", 2021 IEEE International Workshop on Metrology for Industry 4.0 and IoT, June 7-9, 2021, Roma, on-line.
- [14] G. D'Emilia, A. Gaspari, F. Mazzoleni, E. Natale, A. Prato, A. Schiavi, "Metrological characterization of MEMS accelerometers by LDV", Journal of Physics: Conference Series, 1589 (2020) 012011.
- [15] Schiavi, A. Prato, F. Mazzoleni, G. D'Emilia, A. Gaspari, E. Natale, "Calibration of digital 3-axis MEMS accelerometers: A double-blind «multi-bilateral» comparison", 2020 IEEE International Workshop on Metrology for Industry 4.0 and IoT, MetroInd 4.0 and IoT 2020 - Proceedings, 2020, pp. 542-547, 9138215
- [16] Prato, A. Schiavi, F. Mazzoleni, A. Toure, G. Genta, M. Galetto, "A reliable sampling method to reduce large sets of measurements: A case study on the calibration of digital 3-axis MEMS accelerometers", 2020 IEEE International Workshop on Metrology for Industry 4.0 and IoT, MetroInd 4.0 and IoT 2020 - Proceedings, 2020, pp. 537-541, 9138293
- [17] Galati, Simone;Vassallo, Marta;Manzin, Alessandra;Troia, Adriano Magnetic Oxygen-Loaded Nanodroplets: Role of Perfluorocarbon Core and Polymeric Coating in Magnetic Droplet Vaporization for Oxygen Release 2023 8th World Congress on Recent Advances in Nanotechnology (RAN'23)
- [18] Martinez J.;Arduino A.;Moulin K.;Troia A.;Bottauscio O.;Zilberti L. In vitro MR-based Electric Properties Tomography during Temperature Increase ISMRM & SMRT 31st Annual Meeting & Exhibition 7-12 May 2022
- [19] Martinez J.;Arduino A.;Moulin K.;Troia A.;Bottauscio O.;Zilberti L. Magnetic Resonance Electrical Properties Tomography during Temperature Increase: case study in a heterogeneous phantom IMEKO TC1-TC7-TC13-TC18 & MATHMET Joint Symposium 31/08 – 2/09 2022
- [20] U. Zanovello;W. Kilian;A. Troia;B. Ittermann;A. Arduino;L. Zilberti Temperature Dependence of the Electric Properties in MR Phantoms ISMRM&SMRT 31st Annual Meeting&Exhibition 7-12/05/2022

- [21] A. Troia; S. Galati; V. Vighetto; V Cauda, Sonocatalytic activity of ZnO nanoparticles for methylene blu degradation at different ultrasound frequencies, Europena meeting of ESS 28/08-01/09 2022 Jena
- [22] Troia A.; Dişpinar T.; Capozza M.; Kilian W.; Kilian D.; Zilberti L. Fabrication and characterization of an heterogeneous phantom for quantitative MRI 3-rd European Congress of Medical Physics (ECMP 2021) 16-19 June 2021
- [23] Troia A.; Zanovello U.; Zilberti L.; Cencini M.; Tosetti M.; Kilian D.; Capozza M.; Kilian W.; Dispınar Gezer T. En route to multiphasic anthropomorphic MR phantoms: A new mold-based approach applying gel-based preparation to real MR-datasets geometries ISMRM 2021 15-20 May 2021
- [24] A. Troia, V. Cauda, G. Canavese, A. Ancona, F. Zagallo, G. Leonetti, S. Galati Novel contrast agents and increasing tools for radicals generation in low intensity ultrasound based on porous oxides Proceedings of Meetings on Acoustics, Vol. 38, 020015 (2020)