

Curriculum Vitae

Fabrizio Mazzetto is Full Professor of Farm Machinery and Mechanisation (since 2010) at the Faculty of Science and Technology (FaST) of the Free University of Bolzano (UNIBZ). He graduated in Agricultural Science at the University of Milan (1983) and obtained a PhD in Agricultural Engineering (1990) also at the same University. Here he then became Researcher (1990) and later Associate Professor (2000) for the Scientific Disciplinary Sector AGR/09 - Agricultural Mechanics.

During his teaching activity at UNIBZ he held various courses, all related to the problems of agricultural engineering in the application contexts of agri-environmental enterprises. During the last two years, these teachings have been related to: a) Farm machinery and mechanisation; b) Rural technologies systems for mountain environments; c) Mountain viticulture and landscape; d) Food processing equipment; e) Solutions for the digitalisation of agri-environmental enterprises.

From the beginning of his carrier till now, his research activities have focused on topics related to: a) agricultural mechanics and mechanisation, including the development of prototypes of agricultural machinery featured by radical innovations (stripper heads for cereal harvesting, small articulated tractors for the steep lands), b) the application of information technology for the digital management of business processes, including various experiences in modelling applied also to management problems, c) precision agriculture and automation, d) energy applications in the rural sector; e) technologies for baking in small mountain farms.

He has been energy consultant for FAO-UNDP and has coordinated several national and international research projects. Winner of several national research awards, he is a member of the Accademia dei Georgofili in Florence. He is currently coordinating the development of a research laboratory for agro-forestry innovations within the framework of the settlement activities of the Bolzano NOI-Technology Park. He is President of the VII Section AIIA (Italian Association of Agricultural Engineering) which deals with the development of ICT solution in the agricultural, forestry and food sectors.

With regard to institutional activities at UNIBZ, he has held the following roles: Rector's Delegate for Research Quality Assessment at University level (2018-present); Vice Dean for Research (at the FaST; 2013-2017); member of the University Evaluation Board (2013-2017). Currently he is also one of the five appointed national members, for the two-year period 2018-2020, of the Commission for the National Scientific Habilitation (ASN) for the academic Sector 07/C1 (Agricultural, Forestry and Biosystems Engineering).

He has more than 300 scientific and popular publications, whose details are available at the following link: <https://scholar.google.it/citations?hl=it&user=76fRPasAAAAJ>, including his overall bibliometric profile (Citations: 1173, ca. 64% since 2016; H index: 17; i10-index: 35). As recorded by SCOPUS, the number of listed publications is 84 (cit.: 638, H-index: 14).

ON PEER REVIEWED SCIENTIFIC JOURNALS

1. Cesco, S., Pii, Y., Borruso, L., Orzes, G., Lugli, P., **Mazzetto, F.**, Genova, G., Signorini, M., Brunetto, G., Terzano, R., Vigani, G., Mimmo, T. A smart and sustainable future for viticulture is rooted in soil: How to face CU toxicity. *Applied Sciences (Switzerland)* **2021**, 11 (3), art. no. 907, pp. 1-21.
2. Bietresato, M., **Mazzetto, F.** Stability tests of agricultural and operating machines by means of an installation composed by a rotating platform (the "turntable") with four weighting quadrants. *Applied Sciences (Switzerland)* **2020**, 10 (11), art. no. 3786, DOI: 10.3390/app10113786.
3. **Mazzetto, F.**, Gallo, R., Sacco, P. Reflections and methodological proposals to treat the concept of "information precision" in smart agriculture practices. *Sensors (Switzerland)* **2020**, 20 (10), art. no. 2847, DOI: 10.3390/s20102847.
4. Bietresato, M., **Mazzetto, F.** Morphometry as a key to investigate the stability to a wind-induced rollover of agricultural equipment for irrigation. *International Journal of Safety and Security Engineering* **2020**, 10 (1), pp. 129-139. DOI: 10.18280/ijssse.100117
5. Daglio, G., Gallo, R., **Mazzetto, F.** Blooming charge assessment in apple orchards for automatic thinning activities [Beurteilung der Blüte in Apfelplantagen für eine automatische Ausdünnung]. *Bodenkultur* **2019**, 70 (3), pp. 171-180. DOI: 10.2478/boku-2019-0015
6. Gallo, R., Ristorto, G., Bojeri, A., Zorzi, N., Daglio, G., Rinaldi, M.F., Sauli, G., **Mazzetto, F.** Assessment of riparian environments through semi-automated procedures for the computation of eco-morphological indicators: Preliminary results of the WEQUAL project [Bewertung der Uferumgebung durch teilautomatisierte Verfahren zur Berechnung von ökomorphologischen Indikatoren: Vorläufige Ergebnisse des Projekts WEQUAL]. *Bodenkultur* **2019**, 70 (3), pp. 131-145. DOI: 10.2478/boku-2019-0012
7. Bietresato, M., **Mazzetto, F.** Definition of the layout for a new facility to test the static and dynamic stability of agricultural vehicles operating on sloping grounds. *Applied Sciences (Switzerland)* **2019**, 9 (19), art. no. 4135. DOI: 10.3390/app9194135
8. Sambo, P., Nicoletto, C., Giro, A., Pii, Y., Valentinuzzi, F., Mimmo, T., Lugli, P., Orzes, G., **Mazzetto, F.**, Astolfi, S., Terzano, R., Cesco, S. Hydroponic Solutions for Soilless Production Systems: Issues and Opportunities in a Smart Agriculture Perspective. *Frontiers in Plant Science* **2019**, 10, art. no. 923. DOI: 10.3389/fpls.2019.00923
9. Pii, Y., Marastoni, L., Gemassmer, E., Valentinuzzi, F., **Mazzetto, F.**, Mimmo, T., Cesco, S. Phytotoxicity alleviation by bacterial species isolated from polycyclic aromatic hydrocarbons (PAHs) contaminated sites. *Environmental Technology and Innovation* **2019**, 13, pp. 104-112. DOI: 10.1016/j.eti.2018.11.001
10. Bietresato, M., Caligiuri, C., Bolla, A., Renzi, M., **Mazzetto, F.** Proposal of a predictive mixed experimental-numerical approach for assessing the performance of farm tractor engines fuelled with diesel-biodiesel-bioethanol blends. *Energies* **2019**, 12 (12), art. no. 2287. DOI: 10.3390/en12122287
11. Bietresato, M., **Mazzetto, F.** Increasing the safety of agricultural machinery operating on sloping grounds by performing static and dynamic tests of stability on a new-concept facility.

International Journal of Safety and Security Engineering **2018**, 8 (1), pp. 77-89. DOI: 10.2495/SAFE-V8-N1-77-89

12. Gallo, R., Carabin, G., Vidoni, R., Sacco, P., **Mazzetto, F.** Solutions for the automation of operational monitoring activities for agricultural and forestry tasks. *Bodenkultur* **2018**, 69 (3), pp. 131-140. DOI: 10.2478/boku-2018-0012
13. Bietresato, M., **Mazzetto, F.** Proposal of an advanced facility to perform static and dynamic tests of stability on agricultural machines. *Chemical Engineering Transactions* **2017**, 58, pp. 151-156. DOI: 10.3303/CET1758026
14. Ristorto, G., D'Incalci, P., Gallo, R., **Mazzetto, F.**, Guglieri, G. Mission planning for the estimation of the field coverage of unmanned aerial systems in monitoring mission in precision farming. *Chemical Engineering Transactions* **2017**, 58, pp. 649-654. DOI: 10.3303/CET1758109
15. **Mazzetto, F.**, Gallo, R., Importuni, P., Petrera, S., Sacco, P. Automatic filling of field activities register, from challenge into reality. *Chemical Engineering Transactions* **2017**, 58, pp. 667-672. DOI: 10.3303/CET1758112
16. Gallo, R., Nalli, F., Cortese, L., Knollseisen, D., Noggler, W., **Mazzetto, F.** Chainsaw vibrations, a useful parameter for the automatic tree volume estimations and production assessment of felling operations. *Chemical Engineering Transactions* **2017**, 58, pp. 655-660. DOI: 10.3303/CET1758110
17. Bietresato, M., Bisaglia, C., Merola, M., Brambilla, M., Cutini, M., **Mazzetto, F.** An application of morphometry to artificial systems: The evolutionary study of farm tractors. *Chemical Engineering Transactions* **2017**, 58, pp. 145-150. DOI: 10.3303/CET1758025
18. Ristorto, G., Gallo, R., Gasparetto, A., Scalera, L., Vidoni, R., **Mazzetto, F.** A mobile laboratory for orchard health status monitoring in precision farming. *Chemical Engineering Transactions* **2017**, 58, pp. 661-666. DOI: 10.3303/CET175811
19. Gallo, R., Ristorto, G., Daglio, G., Massa, N., Berta, G., Lazzari, M., **Mazzetto, F.** New solutions for the automatic early detection of diseases in vineyards through ground sensing approaches integrating LiDAR and optical sensors. *Chemical Engineering Transactions* **2017**, 58, pp. 673-678. DOI: 10.3303/CET1758113
20. Renzi, M., Bietresato, M., **Mazzetto, F.** An experimental evaluation of the performance of a SI internal combustion engine for agricultural purposes fuelled with different bioethanol blends *Energy* **2016**, 115, pp. 1069-1080. DOI: 10.1016/j.energy.2016.09.050
21. Prando, D., Boschiero, M., Campana, D., Gallo, R., Vakalis, S., Baratieri, M., Comiti, F., **Mazzetto, F.**, Zerbe, S. Assessment of different feedstocks in South Tyrol (Northern Italy): Energy potential and suitability for domestic pellet boilers. *Biomass and Bioenergy* **2016**, 90, pp. 155-162. DOI: 10.1016/j.biombioe.2016.03.039
22. Bietresato, M., Carabin, G., Vidoni, R., Gasparetto, A., **Mazzetto, F.** Evaluation of a LiDAR-based 3D-stereoscopic vision system for crop-monitoring applications. *Computers and Electronics in Agriculture* **2016**, 124, pp. 1-13. DOI: 10.1016/j.compag.2016.03.017
23. Carabin, G., Gasparetto, A., **Mazzetto, F.**, Vidoni, R. Design, implementation and validation of a stability model for articulated autonomous robotic systems. *Robotics and Autonomous Systems* **2016**, 83, pp. 158-168. DOI: 10.1016/j.robot.2016.05.008
24. Vidoni, R., Carabin, G., Gasparetto, A., **Mazzetto, F.** Stability analysis of an articulated agri-robot under different central joint conditions. *Advances in Intelligent Systems and Computing* **2016**, 417, pp. 335-346. DOI: 10.1007/978-3-319-27146-0_26

25. Bietresato, M., Renzi, M., Mischiatti, S., **Mazzetto, F.** Engine test stand layout and post processing tools for the detection of many engine performance parameters. *ARPJ Journal of Engineering and Applied Sciences* **2016**, 11 (2), pp. 1309-1316.

ON PEER REVIEWED CONFERENCE PROCEEDINGS AND BOOK CHAPTERS (Ref. Scopus)

1. Carabin, G., Emanuelli, D., Gallo, R., **Mazzetto, F.**, Vidoni, R. Development of a Climbing-Robot for Spruce Pruning: Preliminary Design and First Results. *CISM International Centre for Mechanical Sciences, Courses and Lectures* **2021**, 601, pp. 100-108.
2. Daglio, G., Zampieri, D., Gallo, R., **Mazzetto, F.** Development of new system and methodology for the assessment of stressed and missing plants in vineyards: Preliminary study. *IEEE International Workshop on Metrology for Agriculture and Forestry* **2020**, MetroAgriFor 2020 - Proceedings, art. no. 9277549, pp. 213-217.
3. Bietresato, M., Selmo, F., **Mazzetto, F.** Concurrent engineering approach in design of test equipment for detecting farm tractor mechanical performances: Application to development of HUB-Adapter. *Engineering for Rural Development* **2020**, 19, pp. 1562-1574. DOI:10.22616/ERDev2020.19.TF389
4. Bietresato, M., Malavasi, M., **Mazzetto, F.** An Approach to the Development of an Integrated Real-Time Engine Test System for Agricultural Machines: Conceiving, Implementation, Set-up and First Tests. *Lecture Notes in Civil Engineering* **2020**, 67, pp. 551-562. DOI: 10.1007/978-3-030-39299-4_61
5. Bietresato, M., Selmo, F., Terzer, T., **Mazzetto, F.** Assessment and classification of farm tractor rims for mechanical testing. *Engineering for Rural Development* **2020**, 19, pp. 1575-1584. DOI: 10.22616/ERDev2020.19.TF390
6. Rinaldi, M.F., Gallo, R., Daglio, G., **Mazzetto, F.** An Innovative Methodology to Be More Time-Efficient When Analyzing Data in Precision Viticulture. *Lecture Notes in Civil Engineering* **2020**, 67, pp. 783-792. DOI: 10.1007/978-3-030-39299-4_84
7. Bietresato, M., Bolla, A., Caligiuri, C., Renzi, M., **Mazzetto, F.** Analysis of cryoscopic behaviour of diesel-biodiesel blends using industrial freezer. *Engineering for Rural Development* **2020**, 19, pp. 1585-1593. DOI: 10.22616/ERDev2020.19.TF391
8. Gallo, R., Marchi, L., Grigolato, S., Cavalli, R., **Mazzetto, F.** A Skyline Deflection Analysis Methodology for Timber Volume Estimation in Yarding Operations. *Lecture Notes in Civil Engineering*, 67, pp. 819-826. DOI: 10.1007/978-3-030-39299-4_88
9. Bietresato, M., Caligiuri, C., Bolla, A., Renzi, M., **Mazzetto, F.** The Response Surface Methodology as a Tool to Evaluate the Effects of Using Diesel-Biodiesel-Bioethanol Blends as Farm Tractor Fuel. *Lecture Notes in Civil Engineering* **2020**, 67, pp. 539-549. DOI: 10.1007/978-3-030-39299-4_60
10. Daglio, G., Gallo, R., Rinaldi, M.F., Massa, N., Todeschini, V., **Mazzetto, F.** Use of a Multicopter-UAV Equipped with a Multispectral Camera to Detect Vineyard Diseases: A Case Study on Barbera and Dolcetto Cultivars. *Lecture Notes in Civil Engineering* **2020**, 67, pp. 803-809. DOI: 10.1007/978-3-030-39299-4_86
11. Mayr, S., Brozzi, R., Cervellieri, A., Desaler, T., Gallo, R., Gamper, J., Geier, B., Holzner, L., Sacco, P., **Mazzetto, F.** Brotweg—A Path of Bread in an Alpine Environment: New Mechanical Solutions for Grain Processing in Steep Mountain Slopes. *Lecture Notes in Civil Engineering* **2020**, 67, pp. 449-456. DOI: 10.1007/978-3-030-39299-4_50

12. **Mazzetto, F.**, Sacco, P. A methodological proposal to assess the information reliability in the Precision Agriculture decisional chains. *2019 IEEE International Workshop on Metrology for Agriculture and Forestry, MetroAgriFor 2019* - Proceedings, art. no. 8909230, pp. 317-322. DOI: 10.1109/MetroAgriFor.2019.8909230
13. Gallo, R., **Mazzetto, F.** A solution for indirect mass assessment of timber during fully suspended yarding operations. *2019 IEEE International Workshop on Metrology for Agriculture and Forestry, MetroAgriFor 2019* - Proceedings, art. no. 8909282, pp. 333-338. DOI: 10.1109/MetroAgriFor.2019.8909282
14. Sacco, P., Gallo, R., **Mazzetto, F.** Data analysis and inference model for automating operational monitoring activities in Precision Farming and Precision Forestry applications. *IOP Conference Series: Earth and Environmental Science 2019*, 275 (1), art. no. 012013. DOI: 10.1088/1755-
15. **Mazzetto, F.**, Gallo, R., Riedl, M., Sacco, P. Proposal of an ontological approach to design and analyse farm information systems to support Precision Agriculture techniques. *IOP Conference Series: Earth and Environmental Science 2019*, 275 (1), art. no. 012008. DOI: 10.1088/1755-
16. Daglio, G., Gallo, R., Petrera, S., Andergassen, C., Kelderer, M., **Mazzetto, F.** Automated crop monitoring solutions to assess the blooming charge in orchards: Preliminary results achieved by a prototype mobile lab used on apple trees. *IOP Conference Series: Earth and Environmental Science 2019*, 275 (1), art. no. 012019. DOI: 10.1088/1755-1315/275/1/012019
17. Gallo, R., Ristorto, G., Bojeri, A., Zorzi, N., Rinaldi, M.F., Sauli, G., **Mazzetto, F.** Design a Web Platform to manage environmental monitoring information to be used in multicriteria evaluations of Green Infrastructures. *IOP Conference Series: Earth and Environmental Science 2019*, 275 (1), art. no. 012005. DOI: 10.1088/1755-1315/275/1/012005
18. Bietresato, M., Malavasi, M., **Mazzetto, F.** Set-up of integrated system for real-time detection and recording of many engine parameters of agricultural machines during Dyno tests. *Engineering for Rural Development 2019*, 18, pp. 160-173. DOI: 10.22616/ERDev2019.18.N187
19. Bietresato, M., Belotti, R., von Ellenrieder, K.D., **Mazzetto, F.** A preliminary study of active stabilization for agricultural machines using a movable mass. *ASME International Mechanical Engineering Congress and Exposition 2019*, Proceedings (IMECE), 4. DOI: 10.1115/IMECE2019-11507
20. Bietresato, M., Caligiuri, C., Renzi, M., **Mazzetto, F.** Use of diesel-biodiesel-bioethanol blends in farm tractors: First results obtained with a mixed experimental-numerical approach. *Energy Procedia 2019*, 158, pp. 965-971. DOI: 10.1016/j.egypro.2019.01.237
21. Bietresato, M., **Mazzetto, F.** Ideation, realization and experimentation of prototype device for measuring farm tractor fuel consumption during dyno tests. *Engineering for Rural Development 2018*, 17, pp. 362-372. DOI: 10.22616/ERDev2018.17.N446
22. Carabin, G., Vidoni, R., **Mazzetto, F.**, Gasparetto, A. Dynamic model and instability evaluation of an articulated mobile agri-robot. *Mechanisms and Machine Science 2017*, 47, pp. 335-343. DOI: 10.1007/978-3-319-48375-7_36
23. Vidoni, R., Gallo, R., Ristorto, G., Carabin, G., **Mazzetto, F.**, Scalera, L., Gasparetto, A. Byelab : An agricultural mobile robot prototype for proximal sensing and precision farming. *ASME International Mechanical Engineering Congress and Exposition 2017*, Proceedings (IMECE), 4A-2017. DOI: 10.1115/IMECE201771216

24. Bietresato, M., Carabin, G., D'Auria, D., Gallo, R., Ristorto, G., **Mazzetto, F.**, Vidoni, R., Gasparetto, A., Scalera, L. A tracked mobile robotic lab for monitoring the plants volume and health. *MESA 2016 - 12th IEEE/ASME International Conference on Mechatronic and Embedded Systems and Applications 2016*, Conference Proceedings, art. no. 7587134. DOI: 10.1109/MESA.2016.7587134
25. D'Auria, D., Ristorto, G., Gallo, R., **Mazzetto, F.** Tracked robot over a slope path: Dynamic stability control. Proceedings. *2016 IEEE 17th International Conference on Information Reuse and Integration 2016*, IRI 2016, pp. 496-499. DOI: 10.1109/IRI.2016.73