

Short Academic Curriculum Vitae

of

MARCO BIETRESATO

Personal information

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Education path

- 2002: **5-year Degree in Mechanical Engineering**, Università degli Studi di Padova, Faculty of Engineering, Padova, Italia
 - 2002: **National Exam to enrol to the Italian Engineers' Roll** Ministero dell'Università e della Ricerca Scientifica e Tecnologica, Italia
 - 2003: **Diploma of 1-year Postgrad Specialization Course in Vehicle Engineering**, Univ. degli Studi di Modena e Reggio Emilia, Faculty of Engineering, Modena, Italia
 - 2008: **PhD in "Industrial Engineering", address in "Industrial Manufacturing Engineering", XX cycle** Univ. degli Studi di Padova, Faculty of Engineering, Italia
 - 2013: **PhD in "Land, Environment, Resources and Health", address in "Mechanical Technologies for Agricultural and Forestry Processes", XXV cycle** Padova, Italia
 - 2017: (Italian) **National Scientific Professorship Qualification as Associate University Professor** ("Professore Universitario di II fascia") for the S.C.¹ 07/C1 "Agricultural, Forest and Biosystems Engineering - Ingegneria Agraria, Forestale e dei Biosistemi" Ministero dell'Università e della Ricerca Scientifica e Tecnologica, Italia
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Present appointment (at unibz)

October 1st, 2020 – now (end of contract: September 30th, 2023)
Junior Researcher with a Fixed-term Contract (RTD-A) in "Agricultural Machinery and Mechanization – Meccanica Agraria" (S.S.D. AGR/09) – 3rd mandate (Ricercatore a Tempo Determinato di tipo A o "junior", Italian Law 240/2010)
Libera Università di Bolzano, Facoltà di Scienze e Tecnologie, Bolzano, Italia
National context appointment

Brief description of responsibilities: the tasks to be performed as Junior Researcher / Assistant Professor consist in carrying out research, teaching (at university level) and third mission activities. More specifically, the effort in the research is carried out in the area of agricultural mechanics: in the systems of generation and delivery of mechanical power (in particular diesel engines also with alternative fuels), in the safety of agricultural machinery (in particular at overturning). The results of research are illustrated in scientific publications to allow the advancement of knowledge in that field and to make them available to national and South-Tyrolean companies.

Previous appointments (at unibz)

Marco Bietresato has been working **at the university** (of Padova and Bolzano) **since 2005** in various positions (as doctoral student, research fellow, research grant holder, fixed-term researcher). Only the positions he has held at the **Free University of Bozen/Bolzano (since 2012)** are listed below.

¹ The acronym "S.C." stands for "Settore Concorsuale", i.e. "Academic Recruitment Field". See: <https://www.cun.it/documentazione/academic-fields-and-disciplines-list/>

Period	Position/Role/Job title (field of work/responsibilities/ academic level)	Company/University Department/Office
Sept. 2012 – Apr. 2014	<i>Post-doctoral research fellow S.S.D. AGR/09</i> (“Study of sensors for continuous monitoring of energy and environmental performance of agricultural tractors”)	Free Univ. of Bolzano – Fac. of Science and Technology
June 2014	<i>Post-doctoral research fellow S.S.D. AGR/09</i> (agricultural engineering): “Development of a articulated tractor for a mechanization in extreme hill and mountain contexts to guarantee adequate ergonomics and safety conditions” (commissioned research project with the company “WM srl” in Cornedo – BZ)	Free University of Bolzano – Fac. of Science and Technology
July 2014 – June 2017	<i>Junior Researcher with a Fixed-term Contract S.S.D. AGR/09</i> (for the research topics see the Academic Discipline’s research fields on the MIUR website ²)	Free University of Bolzano – Fac. of Science and Technology
April 2015- March 2020	<i>Member of the Board of the PhD Course in “Mountain Environment and Agriculture - MEA”</i> (31 st , 32 nd , 33 rd , 34 th and 35 th cycle)	Free University of Bolzano – Fac. of Science and Technology
July 2017 – June 2020	<i>Junior Researcher with a Fixed-term Contract S.S.D. AGR/09</i> (for the research topics see the Academic Discipline’s research fields on the MIUR website)	Free University of Bolzano – Fac. of Science and Technology
Aug. 2020 – Sept. 2020	<i>Occasional Autonomous Collaborator (it. “Collaboratore Autonomo Occasionale”)</i> S.S.D. AGR/09 (“SCAN-APPLE – Solutions for Crop monitoring and bloom chArge assessmeNt in APPLE orchards to support automated thinning treatments”)	Free University of Bolzano – Fac. of Science and Technology

Experience in academic teaching (at unibz)

Marco Bietresato has been teaching at the university (of Padova and Bolzano) **since Academic Year 2004-2005** in various roles (teaching assistant, co-lecturer, course holder). Only the courses taught at the Free University of Bolzano are listed below; the course title is firstly given in the official language of the course to which it is referred.

Academic year	University, Faculty	Course title, ECTS, total taught hours (lesson + exercises/lab)	Academic level	Role
2012-2013	Bolzano, Science and Technology	<i>Meccanica a Meccanizzazione Agricola</i> (Agricultural Engineering), 6 ECTS, 30 hours	Bachelor’s degree	Teaching assistant
	Bolzano, Science and Technology	<i>Fundamentals of Precision Horticulture</i> , 3 ECTS, 15 hours	Master’s degree	Teaching assistant
	Bolzano, Science and Technology	<i>Basics of Farm Information Technologies of Fruit Science</i> , 3 ECTS, 15 hours	Master’s degree	Teaching assistant
2013-2014	Bolzano, Science and Technology	<i>Meccanica e Meccanizzazione Agricola</i> (Agricultural Machinery), 6 ECTS, 20 hours	Bachelor’s degree	Teaching assistant
2014-2015	Bolzano, Science and Technology	<i>Introduction to Information Science</i> , 4 ECTS, 40 hours	Bachelor’s degree	Lecturer
	Bolzano, Science and Technology	<i>Rural Technology Systems</i> , 6 ECTS, 24 hours	Master’s degree	Teaching assistant
2015-2016	Bolzano, Science and Technology	<i>Introduction to Information Science</i> , 4 ECTS, 40 hours	Bachelor’s degree	Lecturer
	Bolzano, Science and Technology	<i>Rural Technology Systems</i> , 6 ECTS, 24 hours	Master’s degree	Teaching assistant
2016-2017	Bolzano, Science and Technology	<i>Fondamenti di Informatica</i> (Introduction to Information Science), 4 ECTS, 40 hours	Bachelor’s degree	Lecturer
	Bolzano, Science and Technology	<i>Rural Technology Systems</i> , 6 ECTS, 24 hours	Master’s degree	Teaching assistant
2017-2018	Bolzano, Science and Technology	<i>Macchine e Impianti</i> (Machines and plants), 6 ECTS, 60 hours	Bachelor’s degree	Lecturer
2018-2019	Bolzano, Science and Technology	<i>Macchine e Impianti</i> (Machines and plants), 6 ECTS, 60 hours	Bachelor’s degree	Lecturer
2019-2020	Bolzano, Science and Technology	<i>Macchine e Impianti</i> (Machines and plants), 6 ECTS, 60 hours	Bachelor’s degree	Lecturer
	Bolzano, Science and Technology	<i>Macchine e Sistemi Produttivi per l’Industria Agroalimentare</i> (Machinery and Production Systems for Agrifood Industry), 6 ECTS, 60 hours	Bachelor’s degree	Lecturer
	Bolzano, Science and Technology	<i>Technologies for Low Input Agricultural Systems</i> , 6 ECTS, 30 hours	Master’s degree	Co-Lecturer (half of the course)
2020-2021	Bolzano, Science and Technology	<i>Technologies for Low Input Agricultural Systems</i> , 6 ECTS, 60 hours	Master’s degree	Lecturer
	Bolzano, Science and Technology	<i>Food Processing Equipment</i> , 6 ECTS, 20 hours	Master’s degree	Co-Lecturer (a third of the course)
2021-2022	Bolzano, Science and Technology	<i>Technologies for Low Input Agricultural Systems</i> , 6 ECTS, 60 hours	Master’s degree	Lecturer

² See: <https://www.miur.it/UserFiles/116.htm>; <http://sito.cineca.it/php5/settori/elenco.php?area=07#AGR/09>

	Bolzano, Science and Technology	<i>Macchine, Impianti e Logistica per l'Industria Agroalimentare</i> (Machines, Plants and Logistists of the Agro-food Industry), 6 ECTS, 60 hours	Bachelor's degree	Lecturer
	Bolzano, Science and Technology	<i>Macchine e Sistemi Produttivi per l'Industria Agroalimentare</i> (Machinery and Production Systems for Agrifood Industry), 6 ECTS, 60 hours	Bachelor's degree	Lecturer

Other academic responsibilities

- September 2012 – now: **Cultore della Materia** (“*recognized expert in the subject*”) of “*Meccanica Agraria*”
- March 2014 – now: **Person in Charge** of the “*Laboratorio di Ingegneria Agroforestale - Laboratory for Agroforestry Engineering*” (organization of internal spaces, design of technical systems, surveillance on work-safety issues, compilation of operational safety documents, planning of scientific instruments purchases)
- May 2018 – now: included in the group of **Reference Professors** (“*docenti di riferimento*”) for the Bachelor’s degree in “*Agricultural and Agri-environmental Sciences*” (Class of Laurea Degrees: L-25) of the Free University of Bolzano
- April 2020 – now: **member of the Board of the PhD Course** in “*Sustainable Energy and Technology - SET*”³ (36th and 37th cycle)
- Member of the examination boards of many courses (only the courses commissions from 2015 onwards have been reported hereinafter; it is worth noting that M. Bietresato has taken part in more than 80 exam commissions since January 2015):
 - January 2015-: “*Rural Technology Systems*” (cod. 47010)
 - February 2015-: “*Introduction to Information Science*” (40104, 42125, 42144)
 - April 2016-: “*Fundamentals of Agricultural and Forest Engineering*” (47020)
 - January 2017-: “*Fondamenti di Informatica*” (40104)
 - June 2018-: “*Ingegneria Agraria e Forestale*” (40150, 40163), “*Machines and Plants*” (40150B, 40163B)
 - January 2019-: “*Agricultural Engineering*” (40150)
 - February 2019-: “*Advanced Topics on Machine Design*” (47503)
 - May 2019-: “*Machines and Plants*” (43044)
 - January 2020-: “*Macchine e Sistemi Produttivi per l'Industria Agroalimentare*” (43081)
 - June 2020-: “*Applied Informatics*” (40184), “*Technologies for low input agricultural systems*” (47043)
 - January 2021-: “*Informatics for Big Data*” (44707), “*Ingegneria Agraria e Forestale*” (40139), “*Meccanica e Meccanizzazione Agricola*” (40189), “*Food processing equipment*” (44708)

Publications

Journal Papers in refereed academic journals (J)

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| <p>J1. Friso D., Bietresato M., 2009. “Assessment of dynamic features of mechanical oscillators for a root-balling machine with a vibrating blade”. <i>Journal of Agricultural Engineering</i>, vol. XL n. 4; p. 1-8, ISSN: 1974-7071</p> <p>Keywords: mechanical oscillators, vibrating blade, root-balling machine, cutting soil</p> <p>J2. Cavalli R., Pellegrini M., Grigolato S., Bietresato M., 2011. “A strategy for the management of abandoned mountain pasture land colonized by dwarf pine”. <i>L'Italia forestale e montana</i>, vol. 66 n. 5; p. 383-393. DOI: 10.4129/ifm.2011.5.02, ISSN: 0021-2776</p> <p>Keywords: woodchips; forest road network; GIS; dwarf pine</p> <p>J3. Grigolato S., Bietresato M., Asson D., Cavalli R., 2011. “Evaluation of the manufacturing of desk and stringer boards for wood pallets production by discrete event simulation”.</p> |
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³ See: <https://www.unibz.it/en/faculties/sciencetechnology/phd-sustainable-energy-technologies/>

Biosystems Engineering, vol. 109 n. 4; p. 288-296, DOI: 10.1016/j.biosystemseng.2011.04.009, ISSN: 1537-5110, Scopus ID 2-s2.0-79960218228

Keywords: discrete-event simulation, system efficiency, sawmill technology, wood pallet production

- J4. Bietresato M., Friso D., Sartori L., 2012. “**Assessment of the efficiency of tractor transmissions using acceleration tests**”, Biosystems Engineering, vol. 112 n. 3; p. 171-180, ISSN: 1537-5110, DOI: 10.1016/j.biosystemseng.2012.03.009, Scopus ID 2-s2.0-84861348219
- Keywords: tractor, acceleration test, transmission, average transmission efficiency, Newton’s law
- J5. Friso D., Bietresato M., 2012. “**Dynamic analysis and design guidelines of mechanical oscillators for cutting soil through vibrating tools**”, Journal of Vibroengineering, vol. 14 n. 4; p. 1775-1786, ISSN 1392-8716, Scopus ID 2-s2.0-84872248491
- Keywords: mechanical oscillator, vibrating tools, soil cutting, root-balling machine
- J6. Bietresato M., Pavan S., Cozzi G., Sartori L., 2013. “**A numerical approach for evaluating and properly setting self-propelled forage harvesters**”, Transactions of the ASABE, vol. 56 n. 1; p. 5-14, ISSN 2151-0032, Scopus ID 2-s2.0-84876858538
- Keywords: corn silage, multi-linear regression model, response surface modelling, self-propelled forage-harvester, theoretical cut length
- J7. Bietresato M., Friso D., Sartori L., 2013. “**An operative approach for designing and optimising a pipeline network for slurry collection from dairy farms across a wide geographical area**”, Biosystems Engineering, vol. 115 n. 3; p. 354-368, ISSN: 1537-5110, DOI: 10.1016/j.biosystemseng.2013.01.008, Scopus ID 2-s2.0-84878666144
- Keywords: pipeline network; slurry collection; Euclidian Steiner Minimum Tree problem; Steiner Insertion algorithm; Kruskal’s algorithm; Simpson’s algorithm
- J8. Bietresato M., Sartori L., 2013. “**Technical aspects concerning the detection of animal waste nutrient content via its electrical characteristics**”, Bioresource Technology, vol. 132, p. 127-136, ISSN: 0960-8524, DOI: 10.1016/j.biortech.2012.12.184, Scopus ID 2-s2.0-84873454815
- Keywords: manure, nutrient content, metal corrosion, electrical conductivity, response surface modelling
- J9. Mazzetto F., Bietresato M., Gasparetto A., Vidoni R., 2013. “**Simulated stability tests of a small articulated tractor designed for extreme-sloped vineyards**” Journal of Agricultural Engineering, vol. 44(s1):e133, p. 663-668, ISSN: 1974-7071, doi: 10.4081/jae.2013.(s1):e133, Scopus ID 2-s2.0-84937550792
- Keywords: articulated tractor; tractor stability; safety index; self-locking articulation, Matlab® simulation
- J10. Mazzetto F., Bietresato M., 2013. “**Proposal of a local telemetry network for the monitoring the thermodynamic and environmental performances of farm tractors**” Journal of Agricultural Engineering, vol. 44(s1):e133, p. 132-136, ISSN: 1974-7071, doi: 10.4081/jae.2013.(s1):e25, Scopus ID 2-s2.0-84914096094
- Keywords: farm tractors; engine performances; remote monitoring; telemetry
- J11. Bietresato M., Friso D., 2014. “**Durability test on an agricultural tractor engine fuelled with pure biodiesel (B100)**” Turkish Journal of Agriculture and Forestry, vol. 38 n. 2, p. 214-223, ISSN: 1300-011X, DOI: 10.3906/tar-1302-51, Scopus ID 2-s2.0-84893023933
- Keywords: agricultural tractor, B100, biodiesel, diesel engine, durability tests, engine performance
- (<http://journals.tubitak.gov.tr/havuz/tar-1302-51.pdf>)
- J12. Bietresato M., Calcante A., Mazzetto F., 2015. “**A neural network approach for indirectly estimating farm tractors engine performance**”, Fuel, vol. 143, p. 144-154, ISSN: 0016-2361, doi: 10.1016/j.fuel.2014.11.019, Scopus ID 2-s2.0-84914145245
- Keywords: diesel engine; BSFC; motor torque; artificial neural network; exhaust gas temperature; motor oil temperature
- J13. Vidoni R., Bietresato M., Gasparetto A., Mazzetto F., 2015. “**Evaluation and stability comparison of different vehicle configurations for robotic agricultural operations on side-slopes**”, Biosystems Engineering, vol. 129, p. 197-211, ISSN: 1537-5110, DOI: 10.1016/j.biosystemseng.2014.10.003, Scopus ID 2-s2.0-84910122845

Keywords: mobile robots; stability; side-slope activities; kinematics

J14. Vidoni R., Bietresato M., Gasparetto A., Mazzetto F., 2015. **Corrigendum to “Evaluation and stability comparison of different vehicle configurations for robotic agricultural operations on side-slopes”**. Biosystems Engineering, vol. 136, p. 162-164, ISSN: 1537-5110, DOI: 10.1016/j.biosystemseng.2015.06.001, Scopus ID 2-s2.0-84937973668

J15. Bietresato M., Carabin G., Vidoni R., Mazzetto F., Gasparetto A., 2015. **“A parametric approach for evaluating the stability of agricultural tractors using implements during side-slope activities”**. Contemporary Engineering Sciences, vol. 8, p. 1289-1309, ISSN: 1313-6569, DOI: 10.12988/ces.2015.56185, Scopus ID 2-s2.0-84947337994

Keywords: farm tractor, side-slope agricultural activities, parametric evaluation of the stability, Response Surface Modelling, equilibrium maps

J16. Bietresato M., Renzi M., Mischiatti S., Mazzetto F., 2016 **“Engine test stand layout and post processing tools for the detection of many engine performance parameters”**. ARPN Journal of Engineering And Applied Sciences, vol. 11, p. 1309-1316, ISSN: 1819-6608, Scopus ID 2-s2.0-84957889378

Keywords: engine test stand, agricultural engines, engine performance detection

J17. Bietresato M., Carabin G., Vidoni R., Mazzetto F., Gasparetto A., 2016. **“Evaluation of a LiDAR-based 3D-stereoscopic vision system for crop-monitoring applications”**. Computers and Electronics in Agriculture, vol. 124, p. 1-13, ISSN: 0168-1699, DOI: 10.1016/j.compag.2016.03.017, Scopus ID 2-s2.0-84961665297

Keywords: vision systems; LiDAR; canopy detection; volume estimation; lateral-linear-stereoscopic vision; agricultural robotic system

J18. Bortolini L., Bietresato M., 2016., **“Effect of seed-beds on the cultivation of Radicchio (Cichorium intybus L., Rubifolium group)”**. Contemporary Engineering Sciences, vol. 9 n. 21, pp. 997-1014, ISSN: 1313-6569, DOI: 10.12988/ces.2016.6689, Scopus ID 2-s2.0-84992503552

Keywords: Bed-former machine; Chicory; Response surface modelling (RSM); Ridging operation

J19. Renzi M., Bietresato M., Mazzetto F., 2016. **“An experimental evaluation of the performance of a SI internal combustion engine for agricultural purposes fuelled with different bioethanol blends”**. Energy, vol. 115, pp. 1069-1080, ISSN: 0360-5442, DOI: 10.1016/j.energy.2016.09.050, Scopus ID 2-s2.0-84991408242

Keywords: Bioethanol; Biofuel mix; Environmental engine performances; Operative engine performances; Spark-ignited (Otto-cycle) internal combustion engine

J20. Bietresato M., Bisaglia C., Merola M., Brambilla M., Cutini M., Mazzetto F., 2017. **“An application of morphometry to artificial systems: the evolutionary study of farm tractors”**. Chemical Engineering Transactions, vol. 58, pp. 145-150, ISSN 2283-9216, DOI: 10.3303/CET1758025, Scopus ID 2-s2.0-85026376797. Originally presented in: XXXVII CIOSTA & CIGR Section V Conference. Palermo, Italia, 13-15 giugno 2017

Keywords: morphometry; evolution of tractors' technical characteristics; time trends; OECD test reports

J21. Bietresato M., Mazzetto F., 2017. **“Proposal of an advanced facility to perform static and dynamic tests of stability on agricultural machines”**. Chemical Engineering Transactions, vol. 58, pp. 151-156, ISSN 2283-9216, DOI: 10.3303/CET1758026. Originally presented in: XXXVII CIOSTA & CIGR Section V Conference. Palermo, Italia, 13-15 giugno 2017, Scopus ID 2-s2.0-85026432856

Keywords: stability of agricultural machines; innovative test equipment; spatial position of a vehicle's centre of gravity; static tests of stability; dynamic tests of stability; tilting turntable; tiltable plane

J22. Bietresato M., Mazzetto F., 2018. **“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, vol. 8 n. 1, pp. 77-89, ISSN: 2041-9031, DOI: 10.2495/SAFE-V8-N1-77-89, Scopus ID 2-s2.0-85047853568. Originally presented in: the 7th International Conference on Safety and Security Engineering – SAFE 2017, Roma, Italia, 6-8 September 2017.

Keywords: stability of agricultural machines on slopes; innovative test-equipment; static tests

J23. Bietresato M., Mazzetto F., 2019. **“Definition of the layout for a new facility to test the static and dynamic stability of agricultural vehicles operating on sloping grounds”**.

Applied Sciences, vol. 9 n. 19, p. 4135, ISSN: 2076-3417, DOI: 10.3390/app9194135, Journal IF: 2.217, SciVal Topic Prominence: 87.546, Scopus ID 2-s2.0-85073293734

Keywords: test-rig design-process; creative-design; 'tiltable' platform; 'angleable' semi-platforms; stability of agricultural machinery on sloping grounds; static and dynamic stability tests

- J24. Bietresato M., Caligiuri C., Bolla A., Renzi M., Mazzetto F., 2019. **“Proposal of a predictive mixed experimental-numerical approach for assessing the performance of farm tractor engines fuelled with diesel-biodiesel-bioethanol blends”**. Energies, vol. 12 n. 12, p. 2287, ISSN: 1996-1073, DOI: 10.3390/en12122287, Journal IF: 2.707, SciVal Topic Prominence: 99.848, Scopus ID 2-s2.0-85068793309

Keywords: farm tractor; diesel engine; response surface method; biodiesel; bioethanol; kinematic viscosity; engine performances; CO and NO_x emissions; exhaust gases opacity

- J25. Caligiuri C., Renzi M., Bietresato M., Baratieri M., 2019. **“Experimental investigation on the effects of bioethanol addition in diesel-biodiesel blends on emissions and performances of a micro-cogeneration system”**. Energy Conversion and Management, vol. 185, pp. 55-65, ISSN: 0196-8904, DOI: 10.1016/j.enconman.2019.01.097, Journal IF: 7.181, SciVal Topic Prominence: 99.848, Scopus ID 2-s2.0-85061576538

Keywords: Alternative fuels, Diesel engine, Bioethanol, Biodiesel, Micro CHP, Pollutant emissions reduction

- J26. Bietresato M., Mazzetto F., 2020. **“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, vol. 10 n. 1, ISSN: 2041-9031, DOI: 10.18280/ijss.100117, Scopus ID 2-s2.0-85081946420. Originally presented in: the 8th International Conference on Safety and Security Engineering – SAFE 2019, Ancona, Italia, 23-25 September 2019.

Keywords: rollover of agricultural equipment, centre pivot and lateral move irrigation systems, morphometry, proportional upscaling/downscaling of a system, sensitivity analysis.

- J27. Anifantis, A.S., Cutini M., Bietresato M., 2020. **“An Experimental-Numerical Approach for Modelling the Mechanical Behaviour of a Pneumatic Tyre for Agricultural Machines”**. Applied Sciences, vol. 10 n.10, p. 3481, ISSN: 2076-3417, DOI: 10.3390/app10103481, Scopus ID 2-s2.0-85085691956

Keywords: farm tractor; vertical loading of tyre; tyre flattening; FE model; safety; response surface methodology.

- J28. Bietresato M., Mazzetto F., 2020. **“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, vol. 10 n. 11, p. 3786, ISSN: 2076-3417, DOI: 10.3390/app10113786, Scopus ID 2-s2.0-85086133590

Keywords: static stability test; stability of machinery on sloping grounds; tiltable and rotating platform (turntable); incipient rollover; roll, pitch and yaw angles.

- J29. Maccioni L, Bietresato M., Borgianni Y., 2020. **“From the extraction of currently fulfilled requirements to value curves: a case-study in the field of harvesting machines for shell fruits and lessons learnt in engineering design”**. Applied Sciences, vol. 10 n. 11, p. 3809, ISSN: 2076-3417, DOI: 10.3390/app10113809, Scopus ID 2-s2.0-85086120024

Keywords: requirements elicitation; value curve; competing factors; engineering design; agricultural equipment; shell fruits-harvesting machines; patent search.

- J30. Bietresato M., Selmo F., Renzi M., Mazzetto F., 2021. **“Torque prediction model of a CI engine for agricultural purposes based on CFD and FVM methodologies validated with experimental tests”**. Applied Sciences, vol. 11 n. 9, p. 3892, ISSN: 2076-3417, DOI: 10.3390/app11093892, Scopus ID 2-s2.0-85105480433 (invited contribution)

Keywords: compression-ignition engine; torque; exhaust gas temperature; thermocouples; CFD; FVM; RSM; indirect estimation; agricultural machines.

- J31. Bietresato M., Bolla A., Caligiuri C., Renzi M., Mazzetto F., 2021. **“The Kinematic Viscosity of Conventional and Bio-Based Fuel Blends as a Key Parameter to Indirectly Estimate the Performance of Compression-Ignition Engines for Agricultural Purposes”**. Fuel, vol. 298, ISSN: 0016-2361, DOI: 10.1016/j.fuel.2021.120817, Scopus ID 2-s2.0-85104342254

Keywords: Diesel engines, Fuel blends, Biodiesel, Bioethanol, Kinematic viscosity, Response Surface Methodology

Chapters in books (B)

- B1. Sartori L., Bietresato M., Gasparini F., 2012. “**Cap. 3 - La logistica degli effluenti di allevamento: conferimento e distribuzione**” (The logistics of animal wastes: conferment and distribution) p. 47-64, Progetto RiduCaReflui – Nitrati da problema a risorsa – Stato dell’arte ed opportunità dalle esperienze di progetto, Legnaro (Padova): Veneto Agricoltura, ISBN: 9788863370867
- B2. Mazzetto F., Bietresato M., Vidoni R., 2013. “**Development of a dynamic stability simulator for articulated and conventional tractors useful for real-time safety devices**” In: (edited by) Wensong Hu, Applied Mechanics and Materials (SJR ranking: Q3-Engineering, miscellaneous), section of Mechatronics, Applied Mechanics and Energy Engineering, vol. 394, p. 546-553, Trans Tech Publications, Durnten-Zurich, DOI: 10.4028/www.scientific.net/AMM.394.546, ISBN: 9783037858325, ISSN: 1660-9336, Scopus ID 2-s2.0-84886929724
- Keywords: agricultural tractors, overturning, dynamic stability, safety index, Matlab® simulation
- B3. Bietresato M., Caligiuri C., Bolla A., Renzi M., Mazzetto M., 2020. “**The Response Surface Methodology as a tool to evaluate the effects of using diesel-biodiesel-bioethanol blends as farm tractor fuel**”. In: (edited by) Antonio Coppola et al., Innovative biosystems engineering for sustainable agriculture, forestry and food production. Lecture Notes in Civil Engineering, vol. 67, Springer Nature Switzerland AG, Switzerland, DOI: 10.1007/978-3-030-39299-4_60, ISBN: 9783030392987, ISSN: 2366-2557, Scopus ID 2-s2.0-85083968859
- Keywords: ternary fuel blends, biodiesel, bioethanol, response surface methodology, farm tractor, agricultural machinery, Diesel engines emission reductions.
- B4. Bietresato M., Malavasi M., Mazzetto M., 2020. “**An approach to the development of an integrated real-time engine test system for agricultural machines: conceiving, implementation, set-up and first tests**”. In: (edited by) Antonio Coppola et al., Innovative biosystems engineering for sustainable agriculture, forestry and food production. Lecture Notes in Civil Engineering, vol. 67, Springer Nature Switzerland AG, Switzerland, DOI: 10.1007/978-3-030-39299-4_61, ISBN: 9783030392987, ISSN: 2366-2557, Scopus ID 2-s2.0-85083970327
- Keywords: measurement equipment; hardware/software interfaces; mobile test-equipment; engine test; agricultural machines; LabVIEW

Conference papers/contributions in proceedings (P)

- P1. Berti G. A., Monti M., Bietresato M., D’Angelo L., 2006. “**Micro wire-drawing as a key for investigating models of micro forming processes**” In: CIRP ICME ‘06, 5th CIRP International Seminar on Intelligent Computation Manufacturing Engineering - Proceedings. Ischia, Italia, 25-28 July 2006, p. 539-544, ISBN/ISSN: 88-95028-01-5, Scopus ID 2-s2.0-34547514212
- Keywords: material rheology, micro-forming, micro wire-drawing, numerical models
- P2. Berti G. A., Monti M., Bietresato M., D’Angelo L., 2007. “**Micro wire-drawing: experiments and modelling**” In: Numiform ‘07 - Materials Processing and Design: Modeling, Simulation and Applications - Proceedings. Porto, Portogallo, 17-21 June 2007, Porto, p. 711-716, ISBN/ISSN: 978-0-7354-0416-8
- Keywords: material rheology, micro-forming, micro wire-drawing, numerical models
- P3. Berti G. A., Monti M., Bietresato M., 2007. “**A new approach for robust design of injection moulding process based on the integration of FEM, RSM and stochastic simulations**” In: 8th A.I.Te.M. Conference - Enhancing the Science of Manufacturing - Proceedings. Montecatini Terme (PT), Italia, 10-12 September 2007, Firenze: Università degli Studi di Firenze, p. 53-54, ISBN/ISSN: 88-7957-264-4
- Keywords: injection moulding process, finite element method, response surface methodology, robust design, stochastic simulations
- P4. Berti G. A., Monti M., Bietresato M., D’Angelo L., 2007. “**Experimental investigation and numerical simulation in micro wire-drawing**” In: 8th A.I.Te.M. Conference - Enhancing the Science of Manufacturing - Proceedings. Montecatini Terme (PT), Italia, 10-12 September 2007, Firenze: Università degli Studi di Firenze, p. 69-70, ISBN/ISSN: 88-7957-264-4

Keywords: microforming, wire drawing, material testing, numerical simulation

- P5. Berti G. A., Monti M., Bietresato M., D'Angelo L., 2007. **“Calibration of an FE code for numerical simulations of micro wire-drawing operations by integration of numerical and experimental techniques”** In: 40th ICFG Plenary Meeting – International Cold Forging Group - Proceedings. Padova, Italia, 19 September 2007

Keywords: microforming, wire drawing, material testing, numerical simulation

- P6. Berti G. A., Monti M., Bietresato M., 2008. **“Robust design by virtual prototyping of injection moulding process”** In: CIRP ICME 2008 6th CIRP - International Conference on Intelligent Computation in Manufacturing Engineering - Proceedings. Napoli, Italia, 23-25 July 2008, Napoli: Università degli Studi di Napoli “Federico II”, ISBN/ISSN: 978-88-900948-7-3

Keywords: injection moulding process, finite element method, response surface methodology, robust design, stochastic simulations

- P7. Baldoin C., Dalla Pace A., De Zanche C., Bondesan D., Bietresato M., 2009. **“Effetto del volume e della polverizzazione sull'efficienza del recupero e sull'efficacia fitoiatrica di un'irroratrice a tunnel nei vigneti”** (Effect of volume and pulverization on the recovery efficiency and on the phytioatric effectiveness of a tunnel sprayer in vineyards) In: Ricerca e innovazione nell'ingegneria dei biosistemi agro-territoriali. Ischia Porto (NA), Italia, 12-16 September 2009, Napoli: Doppiavoce, vol. unico, p. 240, ISBN/ISSN: 978-88-89972-13-7

Keywords: trattamenti, irroratrici, impatto ambientale

- P8. Baldoin C., Sartorato I., Friso D., De Zanche C., De Paoli F., Bietresato M., 2010. **“Weed control by water steam using a self-propelled machine equipped with a condensation chamber”** In: XVIIth World Congress of the International Commission of Agricultural and Biosystems Engineering (CIGR) - Proceedings. Québec City, Canada, 13-17 June 2010, Québec City, p. 100, ISBN/ISSN: 978-2-9811062-1-6

Keywords: thermal weed control, water steam, heat transfer

- P9. Baldoin C., Sartorato I., Friso D., De Zanche C., De Paoli F., Bietresato M., 2010. **“Controllo della flora infestante mediante uso di vapore con una operatrice semovente equipaggiata con una camera di condensazione”** In: Atti della giornata dell'Accademia dei Georgofili “Impiego di mezzi termici per la disinfestazione del terreno e per il controllo della flora infestante”, San Piero a Grado (PI), 15 October 2010, ISBN/ISSN: 9788890547010

Keywords: thermal weed control, water steam, heat transfer

- P10. Sartori L., Bietresato M., Gasparini F., 2010. **“Identification and evaluation of technical solutions for the rationalization of the logistics of animal waste”** In: 12th IWA International Conference on Water Reclamation and Reuse - Reduction of the pollution load from livestock effluents in the Veneto lagoon drainage basin. Isola di San Servolo, Venezia, Italia, 4-8 October 2010, Legnaro (PD): Veneto Agricoltura, p. 10-12, ISBN/ISSN: 978-88-6337-059-1

Keywords: logistics, animal waste, field distribution, plant localization, traceability

- P11. Cavalli R., Grigolato S., Bietresato M., 2010. **“Raccolta e trasformazione dei sarmenti di vite in cippato: disponibilità potenziale e tecnica in provincia di Treviso”** (Collection and processing of vine shoots in woodchips: potential and technical availability in the province of Treviso). In: Convegno RES & Ricerca – Attualità della ricerca nel settore delle energie rinnovabili da biomassa – Proceedings. Ancona, Università Politecnica delle Marche, 16-17 December 2010, Ancona: AIIA, p. 249-258, ISBN/ISSN: 978-88-906186-1-1

Keywords: sarmenti di vite, cippato, analisi a elementi discreti

- P12. Sartori L., Basso B., Morari F., Martello M., Bietresato M., Gasparini F., Chiericati M., Pavan S., 2010. **“Análisis de modelos productivos innovativos en los cultivos extensivos para una gestión eco-compatible en el ámbito de la cuenca de la laguna de Venecia”** (Analysis of innovative productive models in extensive crops for an eco-compatible management in the area of the Venice lagoon basin) In: 9no Curso Internacional de Agricultura de Precisión - Resúmenes de trabajos presentados. EEA INTA MANFREDI, Manfredi, Prov. di Cordoba, Argentina, 14-16 July 2010, Cordoba: Jorge Omar Maita, p. 197-206

- P13. Mazzetto F., Bietresato M., Nardin F., 2013. **“Proposal of an integrated system for the monitoring of N flows from breeding in the autonomous Province of Bolzano – Northern Italy”** In: Proceedings of the EFITA-WCCA-CIGR Conference “Sustainable Agriculture through ICT Innovation”; articolo presentato a: EFITA WCCA CIGR 2013 Conference “Sustainable Agriculture through ICT Innovation”, Torino, Italia, 23-27 June

2013

Keywords: animal wastes; N-flows; automated monitoring; extensive breeding; information systems; alpine technologies

- P14. Mazzetto F., Bietresato M., Calcante A., 2013. **“Proposal of a simplified monitoring approach of environmental performances of farm tractors through a local telemetry network”** In: Proceedings of the EFITA-WCCA-CIGR Conference “Sustainable Agriculture through ICT Innovation”; articolo presentato a: EFITA WCCA CIGR 2013 Conference “Sustainable agriculture through ICT innovation”, Torino, Italia, 23-27 June 2013

Keywords: farm tractors; engine performances; system modelling; operational monitoring; engine exhaust gas temperature

- P15. Mazzetto F., Bietresato M., Bisaglia C., Vidoni R., Weger J., 2013. **“Proposal of a small-size reversible articulated tractor for safe operating in very steep hillsides”** In: XXXV CIOSTA & CIGR V Congress Book of Abstracts, ISBN: 978-87-92869-76-0, ISSN: 1682-1130; articolo presentato a: Conference “From Effective to Intelligent Agriculture and Forestry”, Billund, Danmark, 3-5 July 2013

Keywords: articulated tractor; sloped crops; tractor stability; ROPS

- P16. Mazzetto F., Bietresato M., Nardin F., 2013. **“Proposal for an integrated system for monitoring N flows from livestock husbandry in the autonomous Province of Bolzano – Northern Italy”** In: (edited by) D. Berckmans, J. Vandermeulen, Precision Livestock Farming '13, p. 664-672; articolo presentato a: EC-PLF 2013 Joint European Conference on Precision Livestock Farming, Leuven, Belgium, 10-12 September 2013, Scopus ID 2-s2.0-84902436851

Keywords: animal wastes; N-flows; automated monitoring; extensive livestock husbandry; information systems; alpine technologies

- P17. Bietresato M., Boscaroli P., Gasparetto A., Mazzetto F., Vidoni R., 2014. **“On the design of a mechatronic mobile system for laser scanner based crop monitoring”**In: Proceedings of the 14th Mechatronics Forum International Conference, Karlstad, Sweden, 16-18 June 2014

- P18. Bietresato M., Guarnieri A., Rondelli V., Weger J., Mazzetto F., 2014. **“Concept and design of the ROPS for a small articulated tractor for extreme sloped vineyards”** In: Proceedings of the AgEng 2014 Conference – Engineering for Improving Resource Efficiency, Zurich, Switzerland, 6-10 July 2014

Keywords: articulated tractor; tractor safety; OECD code 7; ROPS; clearance zone for tractors

- P19. Bietresato M., Unterhofer T., Mazzetto F., 2014. **“An overview of the apple-tree cultivation in Alto Adige/South Tyrol, Northern Italy: actual and future technical solutions”**. In: Governo do Estado de Santa Catarina Secretaria de Estado da Agricultura e da Pesca Empresa de Pesquisa Agropecuária e Extensão Rural de Santa Catarina (Epagri). (a cura di): Empresa de Pesquisa Agropecuária e Extensão Rural de Santa Catarina (Epagri) Estação Experimental de São Joaquim, Revista Agropecuária Catarinense. vol. 27, João Batista Leonel Ghizoni, São Joaquim, SC, Brasile, 3-5 June 2014

Keywords: agricultural mechanisation; apple-tree cultivation; Alto Adige/South Tyrol (Italy); technical solutions and information systems for farms

- P20. Bietresato M., Carabin G., Vidoni R., Gasparetto A., Mazzetto F., 2015. **“Evaluation of the stability of an articulated farm tractor using mounted implements on hillsides”**. In: Proceedings of the International Conference SHWA 2015, Lodi - Italy “Safety Health and Welfare in Agriculture, Agro-food and Forestry Systems”. Lodi, 8-11 September 2015

Keywords: numerical stability simulator, tractor + implement stability, articulated farm tractor

- P21. Bietresato M., Vidoni R., Gasparetto A., Mazzetto F., 2015. **“Design and first tests of a vision system on a tele-operated vehicle for monitoring the canopy vigour status in orchards”**. In: Proceedings of EAGE 2015 - Near Surface Geoscience. We PrS P01, Torino, 6-10 September 2015, Scopus ID 2-s2.0-84957949216

- P22. Bietresato M., Unterhofer T., Mazzetto F., 2015. **“An experimental investigation of the field performances of a small articulated tractor designed for extreme-sloped vineyards”**. In: Proceedings of the AIIA 2015 International Mid-Term Conference. Naples, Italy, 22-23 June 2015

Keywords: articulated tractor; roll angles; front-rear angular misalignment; field

performances; extreme-sloped vineyards

- P23. Vidoni R., Bietresato M., Boscarior P., Carabin G., Mazzetto F., Gasparetto A., 2015. **“Study and stability evaluation of a non-conventional Articulated Robotic System for Side-Slope Activities”**. In: Proceedings of the AIMETA XXII Congress. Genova, 14-17 Sept. 2015

Keywords: articulated-robot, stability, field activities

- P24. Bietresato M., Mazzetto F., 2016. **“Concept of an innovative tiltable platform for the experimental test of the stability of agricultural machinery”**. In: Proceedings of MECHTECH 2016 “Mechanization and new technologies for the control and the sustainability of agricultural and forestry systems”, Alghero (SS), 30 May - 1 June 2016, pp. 8-11, DOI: <https://doi.org/10.4081/jae.2016.567>

Keywords: innovative tiltable platform; stability of agricultural machinery; static and dynamic stability tests; circular path on a slope.

- P25. Bietresato M., Carabin G., D’Auria D., Gallo R., Ristorto G., Mazzetto F., Vidoni R., Gasparetto A., Scalera L., 2016. **“A tracked mobile robotic lab for monitoring the plants volume and health”**. In: Proceedings of the 12th IEEE/ASME International Conference on Mechatronic and Embedded Systems and Applications – MESA. Auckland, New Zealand, 29-31 August 2016, DOI: <https://doi.org/10.1109/MESA.2016.7587134>, Scopus ID 2-s2.0-84994275479

Keywords: precision agriculture, tracked mobile robot, canopy volume estimation, NDVI

- P26. Bietresato M., Mazzetto F., 2017. **“Proposal of a system to perform dynamic tests of stability on agricultural machines”**. In: Proceedings of the 11th International AIIA Conference “Biosystems Engineering addressing the Human Challenges of the 21st Century”, Bari, Italia, 5-8 July 2017

Keywords: agricultural machinery stability, dynamic stability tests, innovative test equipment, tiltable platform

- P27. Bietresato M., Mazzetto F., 2017. **“Proposal of an advanced facility for testing the static stability of agricultural machinery”**. In: Proceedings of the 11th International AIIA Conference “Biosystems Engineering addressing the Human Challenges of the 21st Century”, Bari, Italia, 5-8 July 2017

Keywords: stability of agricultural machines, spatial position of a vehicle’s centre of gravity, static tests of stability, innovative testing equipment, tilting turntable

- P28. Bietresato M., Mazzetto F., 2017. **“Concept of a safety system to be used when performing dynamic tests of stability on agricultural machines”**. In: Proceedings of the 11th International AIIA Conference “Biosystems Engineering addressing the Human Challenges of the 21st Century”, Bari, Italia, 5-8 July 2017

Keywords: dynamic stability tests, tiltable and anglable platform, incipient rollover of a machine, anti-reversal safety system, vehicle’s trajectories in a controlled environment

- P29. Bietresato M., Renzi M., Mazzetto F., 2017. **“A different approach to limit the pollutants’ emissions of agricultural engines”**. In: Proceedings of the 11th International AIIA Conference “Biosystems Engineering addressing the Human Challenges of the 21st Century”, Bari, Italia, 5-8 July 2017

Keywords: agricultural engines; engines’ environmental performances; biodiesel, biofuel mixes

- P30. Bonvicini I., Bietresato M., Mazzetto F., Hackl K., 2017. **“Functional analysis as a conceptual instrument for studying and developing new farm-implements. An application to the design of a hand-tool for collecting kaki fruits”**. In: Proceedings of the 11th International AIIA Conference “Biosystems Engineering addressing the Human Challenges of the 21st Century”, Bari, Italia, 5-8 July 2017

Keywords: design process, creative design, agricultural-implement design, functional analysis, kaki-collection implement

- P31. Bietresato M., Mazzetto F., 2018. **“Ideation, realization and experimentation of prototype device for measuring farm tractors’ fuel consumption during dyno tests”**. In: Proceedings of the 17th International Scientific Conference ERDEV - “Engineering for Rural Development”, Jelgava, Latvia, 23-25 May 2018, p. 362-372, ISSN 1691-3043; DOI: [10.22616/ERDev2018.17.N446](https://doi.org/10.22616/ERDev2018.17.N446), Scopus ID 2-s2.0-85048987937

Keywords: fuel-consumption meter, agricultural machines, diesel engines, dyno test, real-time measurements

- P32. Bietresato M., Mazzetto F., 2018. **“Riduzione dell’impatto ambientale dei motori agricoli**

grazie ad un cambio di alimentazione” (“Environmental impact reduction of agricultural engines thanks to a change in their fuelling”). In: (edited by) Bietresato M, Mazzetto F, Proceedings of the congress “La Meccanica Agraria Oggi. Un confronto aperto su concetti, idee e aspettative di una disciplina in continua evoluzione”, Bolzano, 23-24 Nov. 2017, Cleup, ISBN 9788867879472; DOI: 10.23737/MECCANICA_AGRARIA_OGGI.html

Keywords: motori agricoli; inquinanti dei gas di scarico; biodiesel; biocombustibili; miscele di combustibili (agricultural engines; polluting species in exhaust gases; biodiesel; biofuels; fuels mixtures)

P33. Bietresato M., Caligiuri C., Renzi M., Mazzetto F., 2019. “**Use of diesel-biodiesel-bioethanol blends in farm tractors: first results obtained with a mixed experimental-numerical approach**”. In: Proceedings of the 10th International Conference on Applied Energy (ICAE2018), 22-25 August 2018, Hong Kong, China, Energy Procedia, vol. 158, p. 965–971; ISSN: 1876-6102; DOI: 10.1016/j.egypro.2019.01.237, Scopus ID 2-s2.0-85063913105

Keywords: farm tractor, biodiesel, bioethanol, response surface method, modelling, optimization

P34. Caligiuri C., Bietresato M., Renzi M., 2019. “**The effect of using diesel-biodiesel-bioethanol blends on the fuel feed pump of a small-scale internal combustion engine**”. In: Proceedings of the 10th International Conference on Applied Energy (ICAE2018), 22-25 August 2018, Hong Kong, China, Energy Procedia, vol. 158, p. 953–958; ISSN: 1876-6102; DOI: 10.1016/j.egypro.2019.01.235, Scopus ID 2-s2.0-85061605221

Keywords: biodiesel, bioethanol, density, feed-pump, modelling, optimization, response surface method

P35. Bietresato M., Malavasi M., Mazzetto F., 2019. “**Set-up of integrated system for real-time detection and recording of many engine parameters of agricultural machines during dyno tests**”. In: Proceedings of the 18th International Scientific Conference ERDEV - “Engineering for Rural Development”, Jelgava, Latvia, 22-24 May 2019, p. 160-173, ISSN 1691-3043; DOI: 10.22616/ERDev2019.18.N187, Scopus ID 2-s2.0-85067130219

Keywords: agricultural machines, engine performance, test-equipment, PTO-dynamometer, dyno-test, LabVIEW interface, real-time detection

P36. Bietresato M., Belotti R., von Ellenrieder K. D., Mazzetto F., 2019. “**A preliminary study of active stabilization for agricultural machines using a movable mass**”. In: Proceedings of the of the ASME 2019 International Mechanical Engineering Congress and Exposition (IMECE2019), 11-14 November 2019, Salt Lake City, UT, USA; ISBN: 978-0-7918-5941-4; DOI: 10.1115/IMECE2019-11507, Scopus ID 2-s2.0-85078666340

Keywords: overturning of agricultural machines; stability of agricultural machinery; active stability-systems; movable-mass stabilization system, sensitivity analysis.

P37. Bietresato M., Caligiuri C., Bolla A., Renzi M., Mazzetto M., 2019. “**Proposal of a mixed experimental-numerical approach to evaluate the effects of diesel-biodiesel-bioethanol blends for fuelling farm tractors**”. In: Proceedings of the International Mid-Term Conference 2019 AIIA “Biosystem Engineering for Sustainable Agriculture, Forestry and Food Production”, (edited by) Antonio Coppola, Giuseppe Carlo di Renzo, Giuseppe Altieri, Paola d’Antonio, 12-13 September 2019, Matera Italy, Università della Basilicata

Keywords: farm tractor; diesel engine; biodiesel; bioethanol; response surface method; optimization; engine performances; exhaust gases.

P38. Bietresato M., Malavasi M., Mazzetto M., 2019. “**An integrated system for the real-time detection and recording of engine parameters of agricultural machines during dyno tests: development, set-up and first tests**”. In: Proceedings of the International Mid-Term Conference 2019 AIIA “Biosystem Engineering for Sustainable Agriculture, Forestry and Food Production”, (edited by) Antonio Coppola, Giuseppe Carlo di Renzo, Giuseppe Altieri, Paola d’Antonio, 12-13 September 2019, Matera Italy, Università della Basilicata.

Keywords: mobile test-equipment; engine test; agricultural machines; trailed PTO-dyno; Labview; hardware/software interface.

P39. Bietresato M., Selmo F., Mazzetto F., 2020. “**Concurrent Engineering Approach in Design of Test Equipment for Detecting Farm Tractors Mechanical Performances: Application to Development of Hub-Adapter**”. In: Proceedings of the 19th International Scientific Conference ERDEV - “Engineering for Rural Development”, Jelgava, Latvia, 20-22 May 2020, vol. 19, p. 1562-1574, ISSN 1691-3043; DOI: 10.22616/ERDev2020.19.TF389, Scopus ID 2-s2.0-85088463024

Keywords: agricultural machines; engine performance; PTO-dyno; Concurrent Engineering, TRIZ.

- P40. Bietresato M., Selmo F., Terzer T., Mazzetto F., 2020. **“Assessment and Classification of Farm Tractor Rims for Mechanical Testing”**. In: Proceedings of the 19th International Scientific Conference ERDEV - “Engineering for Rural Development”, Jelgava, Latvia, 20-22 May 2020, vol. 19, p. 1575-1584, ISSN 1691-3043; DOI: 10.22616/ERDev2020.19.TF390, Scopus ID 2-s2.0-85088476788
- Keywords: agricultural machines, wheels, tyres, rims, tractor characterization, classification, clustering.
- P41. Bietresato M., Bolla A., Caligiuri C., Renzi M., Mazzetto F., 2020. **“Analysis of Cryoscopic Behaviour of Diesel-Biodiesel Blends Using Industrial Freezer”**. In: Proceedings of the 19th International Scientific Conference ERDEV - “Engineering for Rural Development”, Jelgava, Latvia, 20-22 May 2020, vol. 19, p. 1585-1593, ISSN 1691-3043; DOI: 10.22616/ERDev2020.19.TF391, Scopus ID 2-s2.0-85088448589
- Keywords: biodiesel; biofuel blends; pour point; industrial freezer; freezing curves, binary phase diagram.
- P42. Caligiuri C., Poda M., Bietresato M., Algieri A., Baratieri M., Renzi M., **“Effects on NOx Emissions of Different Injection Timings in a Micro Cogeneration Unit Fuelled with Biodiesel”**. In: Proceedings of the 4th SEE SDEWES Conference Sarajevo 2020 “Sustainable Development of Energy, Water and Environment Systems”, Sarajevo, Bosnia-Erzegovina, 28 June – 2 July 2020
- Keywords: Biodiesel; Alternative fuels; Fossil fuels substitution; Micro-cogeneration; NOx-emissions reduction.
- P43. Bietresato M., Bolla A., Caligiuri C., Renzi M., Mazzetto F., **“The Kinematic Viscosity of Conventional and Bio-Based Fuel Blends as a Key Parameter to Indirectly Estimate the Performance of Compression-Ignition Engines for Agricultural and Cogeneration Purposes”**. In: Proceedings of the 4th SEE SDEWES Conference Sarajevo 2020 “Sustainable Development of Energy, Water and Environment Systems”, Sarajevo, Bosnia-Erzegovina, 28 June – 2 July 2020 (paper selected to be published in an extended version on an international journal)
- Keywords: Biodiesel; Alternative fuels; Fossil fuels substitution; Micro-cogeneration; NOx-emissions reduction.
- P44. Bietresato M., Selmo F., Renzi M., Mazzetto F., 2021. **“Experimental problem of indirectly detecting engine torque delivered by agricultural machines through exhaust gas temperature”**. In: Proceedings of the 20th International Scientific Conference ERDEV - “Engineering for Rural Development”, Jelgava, Latvia, 26-28 May 2021, vol. 20, p. 1236-1243, ISSN 1691-5976; DOI: 10.22616/ERDev.2021.20.TF271, Scopus ID 2-s2.0-85112795449
- Keywords: Farm Machinery, Diesel Engines, Engine Performance, Fuel Gas Temperature, Temperature Sensor Position, Newton’s Equation.
- P45. Bietresato M., Mazzetto F., 2021. **“Will the tractor of the future still look as we know it today? A retrospective on the past and an analysis of the present in order to outline the architecture of the future”**. In: Online Proceedings of the Inn4Mech 2021 “Off-Highway Machine R-evolution” (<https://www.inn4mech.eu/>), Riva del Garda (TN), Italia, 12-15 July 2021.
- P46. Bietresato M., Mazzetto F., 2021. **“A Reasoned Evolutionary Study on the Actual Design of Farm Tractors”**. Article accepted for the publication in: Proceedings of the TFC21, the ETRIA World Conference “TRIZ Future” 2021 “Creative solutions for a sustainable development”, Bolzano, Italia, 22-24 September 2021, to be published in: “Creative solutions for a sustainable development” by Y. Borgianni, S. Brad, D. Cavallucci, P. Livotov, IFIP Springer Nature Switzerland AG, Series on “Advances in Information and Communication Technology”, vol. 635, p. 1-20; ISSN 1868-4238; DOI: 10.1007/978-3-030-86614-3_21, Scopus ID not yet assigned
- Keywords: Farm Tractor, Macroscopic Configuration, Evolutionary Trends, Dominant Design.
- P47. Bietresato M., Selmo F., Renzi M., Mazzetto F., 2021. **“Some Metrological Observations on the Use of the Exhaust Gas Temperature for the Indirect Measurement of the Torque in Agricultural Engines”**. Article accepted for the Proceedings of the 2021 IEEE MetroAgriFor “International Workshop on Metrology for Agriculture and Forestry”, Trento and Bolzano, Italia, 3-5 November 2021
- Keywords: dynamic response of measurement instruments, thermocouples, sensors fixing systems influence, sensor’s time constant.

Curatorships (C)

- C1. Bietresato M., Mazzetto F. (curated by) (2017). **“La Meccanica Agraria oggi. Un confronto aperto su concetti, idee e aspettative di una disciplina in continua evoluzione”** (“Agricultural Mechanics today: an open discussion on concepts, ideas and expectations of a discipline in continuous evolution”), CLEUP, Padova, ISBN: 9788867879472, DOI: https://doi.org/10.23737/MECCANICA_AGRARIA_OGGI.html (in Italian)

Other publications by the applicant (e.g.: printed contributions, newspaper articles) (O)

- O1. Bietresato M., Gasparini F., Sartori L., 2012. **“Logistica e tracciabilità nel trasporto e nella distribuzione degli effluenti”** (“Logistics and traceability in transport and distribution of animal wastes”), Terra e Vita – Speciale Progetto RiduCaReflui, 4, p. 11-16, ISSN: 0040-3776 (in Italian)
- O2. Bietresato M., Concli F., Mazzetto F., 2018. **“Come caratterizzare l’efficienza delle macchine agricole”** (eng.: “How characterizing the efficiency of agricultural machines”), Il Progettista Industriale – Quaderni di Progettazione, May 2018, p. 61-65, ISSN: 0392-4823 (in Italian)
- O3. Concli F., Bietresato M., Calligaro S., 2018. **“Le trasmissioni CVT ibride: una possibilità concreta per ottimizzare l’efficienza dei motori a combustione interna”** (“Hybrid CVT transmissions: a possibility to optimize the efficiency of internal combustion engines”), Organi di Trasmissione, June 2018, p. 28-32, ISSN: 0030-4905 (in Italian)
- O4. Bietresato M., Concli F., Mazzetto F., 2018. **“How characterizing the efficiency of agricultural machines”**, Power Transmission World – Research & Development, November 2018, p. 48-51, ISSN: 2280-2045 (in English); it is the official translation of ref. O2

Publications about the applicant (A)

- A1. Zilli A., 2015. **“La poltrona rossa - Rendi misurabile ciò che non lo è!”** (“The red armchair – Make measurable what normally is not”), interview to Bietresato M. and Mejia-Aguilar A. published in “Accademia”, n. 70, July 2015, “Tutti in campo”, p. 8-9 (in Italian).
- A2. Zilli A., 2015. **“Quando l’ingegneria entra in campo - L’agricoltura diventa sempre più automatizzata: il docente Marco Bietresato ci racconta come”** (“When engineering enters the field - Agriculture becomes more and more automated: the lecturer Marco Bietresato tells us how”), interview published in “Alto Adige”, Thursday July 30th, 2015, p. 24 (in Italian).
- A3. Zilli A., 2020. **“Il primo esperimento di visita didattica online. In questi tempi un’escursione programmata da lungo tempo si può comunque reinventare. Gli studenti della magistrale EMMA ospiti virtuali dell’azienda NeoruraleHub.”** (“The first online educational visit experiment. In these times a long-planned excursion can still be reinvented. The students of the master course EMMA are virtual guests of the company NeoruraleHub”), interview published in “Uninews” (news section of the Unibz website), Wednesday May 13th, 2020 (in Italian).
- A4. NeoruraleHub, 2020. **“Technology and natural food aren’t enemies”**, post appeared in the official LinkedIn channel of NeoruraleHub on June 10th, 2020 (title in English, text in Italian) about the seminar held by NeoruraleHub representatives at the course of Dr. Bietresato.
- A5. Centrica Business Solution, 2020. **“Cogeneration & Agriculture: application and future trend”**, post appeared in the official LinkedIn channel of Centrica on June 11th, 2020 (title in English, text in Italian) about the seminar held by Centrica representatives at the course of Dr. Bietresato.

Memberships in Scientific Associations

Current memberships

- 2012-now: **AIIA** (*Associazione Italiana di Ingegneria Agraria – Italian Association of Agricultural Engineering*; <http://www.aiia.it>): regular member
- 2014-now: **ASABE** (*American Society of Agricultural and Biological Engineers*; <https://www.asabe.org/>); regular member

- 2016-now: **SIMAI** (*Società Italiana di Matematica Applicata ed Industriale – Italian Association of Applied and Industrial Mathematics*; <https://www.simai.eu/>); regular member
- 2016-now: **ASME** (*American Society of Mechanical Engineers*; <https://www.asme.org/>); regular member
- 2019-now: **ATI** (*Associazione Termotecnica Italiana – Italian Thermotechnical Association*; <https://www.atinazionale.it/>); regular member
- 2021-now: **AICARR** (*Associazione Italiana Condizionamento dell'Aria, Riscaldamento e Refrigerazione – Italian Association for Air Conditioning, Heating and Refrigeration*; <https://www.aicarr.org/>); regular member

Other affiliations

- 2003–now: **Italian Engineers' Roll**, seat of Padova, section “A” (*Senior Engineers*), sectors “all” (*Civil/Environmental, Industrial, Information*), registration nr. 4046

Useful links about the candidate

- Personal homepage at **ORCID** (*public website*): <https://orcid.org/0000-0002-6166-8958>
- Personal profile at **SCOPUS** (*website visible only for registered institutions*) <https://www.scopus.com/authid/detail.uri?authorId=18041671800>
- Personal profile at **WEB OF SCIENCE** (*website visible only for registered institutions*) <https://app.webofknowledge.com/author/record/2761913>
- Personal homepage at **RESEARCHER-ID / PUBLONS** (*public website*): <http://www.researcherid.com/rid/E-7253-2015> (NB: now moved to Publons) <https://publons.com/researcher/1333245/marco-bietresato/>
- Personal homepage at **GOOGLE SCHOLAR** (*public website*): https://scholar.google.it/citations?hl=it&user=E6c6m1gAAAAJ&view_op=list_works&ortby=pubdate
- Personal homepage at **SCIPROFILES** (*public website*): <https://sciprofiles.com/profile/58218>
- Personal homepage at **UNIBZ** (*public website*): <https://www.unibz.it/en/faculties/sciencetechnology/academic-staff/person/32764-marco-bietresato>
- Personal homepage at **ACADEMIA.EDU** (*public website; downloads available only for registered users*): <https://unibz.academia.edu/MarcoBietresato>
- Personal homepage at **RESEARCH GATE** (*public website; downloads available only for registered users*): https://www.researchgate.net/profile/Marco_Bietresato
- Personal homepage at **ASME** (*public website*): <https://community.asme.org/members/marcobietresato635/default.aspx>
- Personal homepage at **LINKEDIN** (*public website; complete webpage available only for registered users*): <https://www.linkedin.com/in/marco-bietresato-a541a31a7/>

Bolzano, 2nd October 2021

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