

Univ. Prof. Dipl.-Ing. Dr. agr. Andreas Gronauer

Andreas Gronauer was a full professor for Agro-System-Engineering at the University of Natural Resources and Life Sciences, Vienna until 31.12.2023. He received both his Dipl.-Ing. and PhD from the Technical University Munich (TUM). Before moving to Vienna, he was head of the Department of Energy and Environment of the Bavarian State Research Centre of Agricultural Engineering before being promoted to vice director of the Institute of Agricultural Engineering, Farm-building and Environmental Technology.

His research interests cover a range of environmental technologies and agricultural engineering topics, with a particular focus on sustainability.

Andreas Gronauer has a range of activities in the global area of environmental and agricultural technology. During 1996 to 2005 he was responsible for the collaboration between TUM and Pontificia Universidad Católica de Santiago Chile where, in 1997, he taught as a visiting professor, and has since chaired many conferences, seminar series and summer schools in Chile. 1998 to 2010, he has taken part in the Goethe Institute's international environmental program, for which he has given seminars in Africa and Asia on anaerobic digestion, composting and renewable energy production.

Between 1998 - 2013, he has been a board member of the German Association of Biogas (Fachverband Biogas). Since 2011, he is a board member of the Austrian Biomass Association, the Austrian association of Agricultural Engineering (ÖKL), the Austrian Agriculture Cluster (AAC). In 2014 he was nominated as a full member of the "Club of Bologna", Italy and in 2016 as a member of the working group "research and education" VDI-MEG, Germany.

Curriculum vitae

Univ. Prof. Dipl.-Ing. Dr. Andreas Gronauer

Education:

- 1982 – 1988 Student Technical University Munich (TUM), Dipl.-Ing.agr.
- 1993 Dissertation Dr. agr.; titel of thesis: „Einflussfaktoren auf die Ammoniakverflüchtigung aus Flüssigmist als Grundlage verfahrenstechnischer Verbesserungen“ („Factors influencing ammonia volatilisation from liquid manure as a basis for process improvements".)

Career:

- 1988 – 2002 Employee at Technical University Munich (TUM)
- 1993 – 1996 Coordinator of research group “Umweltschonende Aufbereitung von Bioabfall durch Kompostierung und Rückführung auf landwirtschaftliche und gärtnerische Flächen“ (“Environmentally friendly processing of biowaste by composting and recycling to agricultural and horticultural land".) at Bavarian research centre of agricultural engineering
- 2003 – 2011 Full employee Bavarian research centre of agriculture, Institute of agricultural engineering
- 1993 – 2004 Head of research group „Gaseous Emissions in Livestock Farming“ at Bavarian research centre of agricultural engineering
- 1994 – 2011 Head of researcher groups “Waste Management” and “Analysis of gaseous emissions” at Bavarian research centre of agricultural engineering
- 1997 – 2011 Head of department “Energy- and Environmental Technology” at Bavarian research centre of agricultural engineering, 2003 changed in Bavarian research centre of agriculture
- 2003 – 2007 Vice director of Institute of agricultural engineering, Bavarian research centre of agriculture, Freising, Germany
- Since 2011 Full Professor for “Agro System Engineering” at University of Natural Resources and Life Sciences Vienna
- 2011 – 03.2023 Head of the Institute “Agricultural Engineering” at University of Natural Resources and Life Sciences Vienna
- 2016 – 31.12.2023 Vice of the department of sustainable agriculture systems at University of Natural Resources and Life Sciences Vienna

Selected honours and awards:

- 1994 “Anton-Schlüter”-Award 1994
- 2000 “Heinrich-Baur”-Award of Research Centre Weihenstephan (TUM-WZW)
- 2019 Heinz-Schulz-honour medal of the German Biogas Association

Selected memberships:

- German Association of Informatics in agriculture (GIL),
- German Association of Engineers - “Max-Eyth-Society (VDI-MEG),
- American Society of Agricultural and Biosystem Engineers (ASABE),
- German Trustees of Technology and Civil Engineering in Agriculture (KTBL),
- Austrian Trustees of Agriculture (ÖKL),
- Austrian Agriculture Cluster (AAC),
- Club of Bologna.

Selected Publications (2022 – 2023):

Shevidi, A., Lizasoain, L., Wlcek, B., Frühauf, S., Gronauer, A., Bauer, A.: “Biogas Production from Steam-Exploded Maize Stover: Results from Continuous Anaerobic Tank Bioreactor Tests“, *Fermentation* 9 (4), 339 (<https://doi.org/10.3390/fermentation9040339>)

Kitzler, F., Barta, N., Neugschwandtner, R.W., Gronauer, A., Motsch, V.: “WE3DS: An RGB-D Image Dataset for Semantic Segmentation in Agriculture”, *Sensors*, 2023, 23(5), 2713. (<https://doi.org/10.3390/s23052713>)

Medel-Jiménez, F., Piringner, G., Gronauer, A., Krexner, T., Kral, I.: “Modelling soil emissions and precision agriculture in fertilization life cycle assessment - A case study of wheat production in Austria”, *Journal of Cleaner Production*, 2022, 380, 134841 (<https://doi.org/10.1016/j.jclepro.2022.134841>)

Koppensteiner, L.J., Kaul, H.-P., Piepho, H.-P., Gronauer, A., Neugschwandtner, R.W.: „Yield and yield components of facultative wheat are affected by sowing time, nitrogen fertilization and environment”, *European Journal of Agronomy*, 2022, 140, 126591 (<https://doi.org/10.1016/j.eja.2022.126591>)

Kitzler, F., Wagentristl, H., Neugschwandtner, R.W., Gronauer, A., Motsch, V.: „Influence of Selected Modeling Parameters on Plant Segmentation Quality Using Decision Tree Classifiers”, *Agriculture (Switzerland)*, 2022, 12(9), 1408 (<https://doi.org/10.3390/agriculture12091408>)

Krexner, T., Bauer, A., Zollitsch, W., Gronauer, A., Kral, I.: „Environmental life cycle assessment of nano-cellulose and biogas production from manure”, *Journal of Environmental Management*, 2022, 314, 115093 ([10.1016/j.jenvman.2022.115093](https://doi.org/10.1016/j.jenvman.2022.115093))

Britz, R., Barta, N., Klingler, A., ...Gronauer, A., Motsch, V.: „Hyperspectral-Based Classification of Managed Permanent Grassland with Multilayer Perceptrons: Influence of Spectral Band Count and Spectral Regions on Model Performance”, Agriculture (Switzerland), 2022, 12(5), 579 (<https://doi.org/10.3390/agriculture12050579>)

Supper G.,Barta N.,Gronauer A. and Motsch V.: “Localization accuracy of a robot platform using indoor positioning methods in a realistic outdoor setting.” Die Bodenkultur: Journal of Land Management, Food and Environment, 2022 Vol.72 (Issue 3), pp. 133-139 (<https://doi.org/10.2478/boku-2021-0014>)

Holzinger, A., Saranti, A., Angerschmid, A., Gollob, C., Stampfer, K.: „Digital Transformation in Smart Farm and Forest Operations Needs Human-Centered AI: Challenges and Future Directions”, Sensors, 2022, 22(8), 3043 (<https://doi.org/10.3390/s22083043>)

Krexner T.,Kral I.,Gronauer A.,Medel-Jiménez F. and Bauer A.: “ Comparison of a system expansion and allocation approach for the handling of multi-output processes in life cycle assessment – a case study for nano-cellulose and biogas production from elephant manure.” Die Bodenkultur: Journal of Land Management, Food and Environment, 2022, Vol.72 (Issue 3), pp. 113-121 (<https://doi.org/10.2478/boku-2021-0012>)

Britz, R., Barta, N., Schaumberger, A., Gronauer, A., Motsch, V.: „Spectral-Based Classification of Plant Species Groups and Functional Plant Parts in Managed Permanent Grassland”, Remote Sensing 2022, 14(5), 1154 (<https://doi.org/10.3390/rs14051154>)

Publication facts and statistics

(<https://www.scopus.com>: and <https://scholar.google.de/schhp?hl=de>)

Number of peer reviewed publications:

Total: 80

Citations of publications:

Total: 2846

Complete H-Index (Google Scholar):

2018 – 2023: 17

Total: 28

Research Focus:

1. Implementation of electronics into agriculture production processes and machinery (sensor technology, data management, computing) for smart adaption of agriculture machinery and technologies for greening and sustainable land management
2. Life Cycle Assessment (LCA) of agricultural production processes connected with 1.
3. Technology for Emission control in Animal husbandry systems and sustainable organic fertilizer management.
4. Development of technologies to exploit renewable raw materials and especially efficient use of renewable energy sources (AgriPV- and Anaerobic Digestion Technologies)

Teaching and training activities:

Since 1989 he has been teaching lectures, seminars and excursions first at TUM in Weihenstephan and, since 2011, in Vienna, either in German or English. He is teaching in the Bachelor and Master Programs of Agricultural Sciences and Forestry Sciences, as well as in the international Master “Biomass Technology” (TUM, BOKU).

During this period, he supervised more than 200 Bachelor, Master and Diplom/Laurea students and more than 10 PhD’s. Former doctoral students today hold leading positions, such as Stefan Nesper, he is the head of the Institute of agricultural engineering of the Bavarian Research Center for Agriculture, at BOKU Elisabeth Quendler received her Venia in 2011 and Alexander Bauer in 2021 under his supervision.

2021 he established the first Life-Long-Learning Course in “Advanced Technologies for Smart Crop Farming” at BOKU Vienna as a contribution to the development of an European curriculum in the sector of agricultural engineering (<https://usage.projects.unibz.it>).