

2019 Superior Paper Award Winners Presented in 2020

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ESH - Ergonomics, Safety, & Health

[Agricultural Security Monitoring and Safety Alert System: Implementation of Wireless Video on the Farmstead](#)

S. G. Ehlers, R. L. Tormoehlen

Published in Journal of Agricultural Safety and Health 25(4): 155-168 (doi: 10.13031/jash.13004). Copyright 2019 American Society of Agricultural and Biological Engineers.

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ITSC – Information Technology, Sensors, & Control System

[Design and Testing of an Impact Sensor Using Two Crossed Polyvinylidene Fluoride \(PVDF\) Films](#)

Y. Sun, R. Cao, Z. Lu, X. Nie, Z. K. Li, Y. H. Yu, H. P. Tian, X. Q. Qian, J. P. Wang

Published in Transactions of the ASABE 62(5): 1195-1205 (doi: 10.13031/trans.13440). Copyright 2019 American Society of Agricultural and Biological Engineers.

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[Automatic Recognition of Porcine Abnormalities Based on a Sound Detection and Recognition System](#)

S. Zhang, J. Tian, A. Banerjee, J. Li

Published in Transactions of the ASABE 62(6): 1755-1765 (doi: 10.13031/trans.12975). Copyright 2019 American Society of Agricultural and Biological Engineers.

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[Using gprMax to Model Ground-Penetrating Radar \(GPR\) to Locate Corn Seed as an Attempt to Measure Planting Depth](#)

K. O. M. Mapoka, S. J. Birrell, M. Z. Tekeste, B. Steward, D. Eisenmann

Published in Transactions of the ASABE 62(3): 673-686 (doi: 10.13031/trans.12809). Copyright 2019 American Society of Agricultural and Biological Engineers.

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MS – Machinery Systems

[Design and Field Evaluation of a Robotic Apple Harvesting System with a 3D-Printed Soft-Robotic End-Effector](#)

C. J. Hohimer, H. Wang, S. Bhusal, J. Miller, C. Mo, M. Karkee

Published in Transactions of the ASABE 62(2): 405-414 (doi: 10.13031/trans.12986). Copyright 2019 American Society of Agricultural and Biological Engineers.

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[Development and Preliminary Evaluation of an Integrated Individual Nozzle Direct Injection and Carrier Flow Rate Control System for Pesticide Applications](#)

J. D. Luck, S. A. Shearer, M. P. Sama

Published in Transactions of the ASABE 62(2): 505-514 (doi: 10.13031/trans.13170). Copyright 2019 American Society of Agricultural and Biological Engineers.

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Investigation of an Experimental Laser Sensor-Guided Spray Control System for Greenhouse Variable-Rate Applications

T. Yan, H. Zhu, L. Sun, X. Wang, P. Ling

Published in Transactions of the ASABE 62(4): 899-911 (doi: 10.13031/trans.13366). 2019 American Society of Agricultural and Biological Engineers.

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NRES – Natural Resources & Environmental Systems

Sediment Phosphorus Release in a Shallow Eutrophic Reservoir Cove

J. A. McCarty

Published in Transactions of the ASABE 62(5): 1269-1281 (doi: 10.13031/trans.13309). Copyright 2019 American Society of Agricultural and Biological Engineers.

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Nitrate Removal by Floating Treatment Wetlands Amended with Spent Coffee: A Mesocosm-Scale Evaluation

M. G. Keilhauer, T. L. Messer, A. R. Mittelstet, T. G. Franti, J. R. Corman

Published in Transactions of the ASABE 62(6): 1619-1630 (doi: 10.13031/trans.13431). Copyright 2019 American Society of Agricultural and Biological Engineers.

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Quantification of Available Water Capacity Comparing Standard Methods and a Pedostructure Method on a Weakly Structured Soil

J. Blake, A. T. Assi, R. H. Mohtar, E. F. Braudeau, C. L. S. Morgan

Published in Transactions of the ASABE 62(2): 289-301 (doi: 10.13031/trans.13073). Copyright 2019 American Society of Agricultural and Biological Engineers.

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Computational Fluid Dynamics Simulation of Airflow through Standing Vegetation

H. B. Gonzales, J. Tatarko, M. E. Casada, R. G. Maghirang, L. J. Hagen, C. J. Barden

Published in Transactions of the ASABE 62(6): 1713-1722 (doi: 10.13031/trans.13449). 2019 American Society of Agricultural and Biological Engineers.

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PAFS - Plant, Animal, & Facility Systems

Highly Efficient Biodiesel Conversion from Soybean Oil Using Liquid-Phase Plasma Discharge Technology

S. Wu, M. A. Bashir, H. Hsieh, A. Krosuri, A. McDonald

Published in Transactions of the ASABE 62(5): 1129-1134 (doi: 10.13031/trans.13534). Copyright 2019 American Society of Agricultural and Biological Engineers.

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Prediction of Optimum Supplemental Heat for Piglets

H. F. M. Milan, A. S. C. Maia, K. G. Gebremedhin

Published in Transactions of the ASABE 62(2): 321-342 (doi: 10.13031/trans.13015). Copyright 2019 American Society of Agricultural and Biological Engineers.

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PRS - Processing Systems

[A Novel Mathematical Model for Predicting Performance of the Sequential Batch Anaerobic Digestion Process: Part I](#)

H. M. Keener, F. Xu

Published in Transactions of the ASABE 62(3): 719-729 (doi: 10.13031/trans.13246). Copyright 2019 American Society of Agricultural and Biological Engineers.

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[Chilled Aeration to Control Pests and Maintain Grain Quality during Summer Storage of Wheat in the North Central Region of Kansas](#)

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Published in Applied Engineering in Agriculture 35(4): 657-688 (doi: 10.13031/aea.13252). Copyright 2019 American Society of Agricultural and Biological Engineers.

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