



Hideo HASEGAWA, Ph.D.

Associate Professor

Program: Environmental Science and Technology

Area: Environmental Science for Agriculture and Forestry

Undergraduate: Dept. of Production and

Environmental Science

Professional Expertise

His professional expertise encompasses development of innovative off-road vehicles, precision farming by using sensors and GPS, development of electric tractor and conservation tillage tools for sustainable development, mechanization for sugarcane harvesting and oil palm in tropical countries.

Research Fields of Interest

Numerical Mechanics

- Research and Development of off-road vehicles

Precision Farming

- Autonomous Vehicle
- Agricultural Robot

Environmental Conservation

- Electric Tractor
- Research and Development of Conservation Tillage

Biomass and Energy

- Mechanization for Sugarcane
- Mechanization for Oil Palm plantation

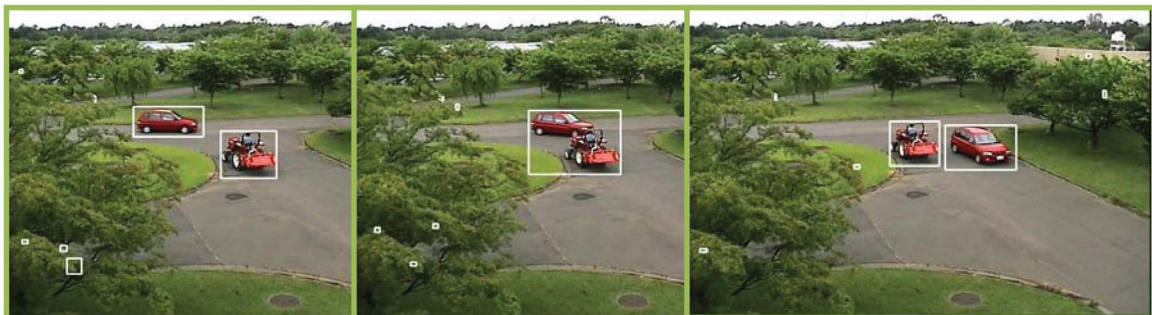


Education

1996: Ph.D. in Agriculture, Graduate School of Agriculture and Science, University of Tsukuba, Japan

1993: M.S. in Agriculture, Graduate School of Agriculture and Science, University of Tsukuba, Japan

1991: B.S. in Agriculture, College of Agriculture and Science, University of Tsukuba, Japan



Professional Societies and Activities

1. Member, Japanese Society of Agricultural Machinery
2. Member, Japanese Society of Farm Work Research
3. Member, The Japan Society of Mechanical Engineers

Awards

1. Shikoku Electric Vehicle Rally ,Tokushima, 2003

Major Publications

Papers

*Numerical Mechanics

- [1] "Modal Analysis for the Monocoque-type Frame of Agricultural Tractor" *Journal of the JSAM*, vol.56, no.5, pp.3-11, 1994
- [2] "Static Elastic-Plastic Analysis for the Monocoque-type Frame of an Agricultural Tractor" *Journal of the JSAM*, vol.59, no.1, pp.11-20, 1997

*Precision Farming

- [1] "Trajectory Control for Agricultural Autonomous Vehicle (Part 1)", *Journal of the JSAM*, vol.60, no.2, pp.89-96, 1998
- [2] "Trajectory Control for Agricultural Autonomous Vehicle (Part 2)", *Journal of the JSAM*, vol.61, no.6, pp.131-140, 1999
- [3] "Recognition of Position of Moving Object by Image Processing: Tracing of Indoor Movement of a Person", *Japanese Journal of Farm Work Research*, vol.35, no.3, pp.133-140, 2000
- [4] "Trajectory Control and Its Application to Approach a Target Part", *Transactions of the ASABE*, vol.45, no.4, pp.1191-1197, 2002
- [5] "Trajectory Control and Its Application to Approach a Target Part", *Transactions of the ASABE*, vol.45, no.4, pp.1199-1205, 2002
- [6] "Characterization of Laser Range Finder for in Field Navigation of Autonomous Tractor", *ATOE 2004, ASABE*, pp.120-130, 2004
- [7] Detection of an Agricultural Autonomous Vehicle by Using Background Estimation Method Based on Kalman Filter, *Japanese Journal of Farm Work Research*, vol.40, no.4, pp.183-189, 2005
- [8] "Navigation Using a Laser Range Finder for Autonomous Tractor (Part 1)", *Journal of the JSAM*, vol.68, no.1, pp.68-77, 2006

*Environmental Conservation and Energy

- [1] "Preliminary Study on the Applicability of an Electric Tractor (Part 1)", *Journal of the JSAM*, vol.63, no.3, pp.130-137, 2001
- [2] "Numerical Network Modeling and Sensitivity Analysis of the Bulk Density Response in Sandy Loam Soil under Vehicle-Induced Stress", *Journal of the JSAM*, vol.67, no.2, pp.77-85, 2005
- [3] "Effects of Compost Incorporation on the Compaction Behavior of a Sandy Loam Soil", *Journal of the JSAM*, vol.68, no.4, pp.56-64, 2006
- [4] "Field Evaluation of Slot Openers for Minimum Tillage (Part 1)", *Journal of the JSAM*, vol.69, no.6, pp.65-74, 2007



[5] "Mechanization for the Improvement of Sugar Harvesting and Transportation System in Thailand", *Journal of the JSAM*, vol.70, no.2, pp.51-61, 2008

[6] "Truck Allocation Planning for Cost Reduction of Mechanical Sugarcane Harvesting in Thailand", *Journal of the JSAM*, vol.70, no.2, pp.62-71, 2008

[7] "Potential application of color and hyperspectral images for estimation of weight and ripeness of oil palm (*Elaeis guineensis* Jacq. var. *tenera*)", *Agricultural Information Research*, vol.18, no.2, pp. 72-81, 2009

