

Curriculum Vitae

Sun-Ok Chung, Ph.D.

Associate Professor/ Department Head

- Dept. of Biosystems Machinery Engineering, Chungnam National University
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Education

Ph. D. Program , University of Missouri Research topic: On-the-go soil strength profile sensor (Biological Engineering)	Aug. 2000 to May 2004 Columbia, Missouri, USA
Ph. D. Coursework Completion , Seoul National University (Agricultural Engineering)	Mar. 1997 to Feb. 1999 Seoul, Korea
Master of Science , Seoul National University Research topic: Development of a pneumatic granular applicator for paddy field (Agricultural Engineering)	Mar. 1995 to Feb. 1997 Seoul, Korea
Bachelor of Science , Seoul National University Research topic: Impact of tractor travel on soil compaction (Agricultural Engineering)	Mar. 1988 to Feb. 1995 Seoul, Korea

Career

Professor , Chungnam National University	Mar. 2007 to present Daejeon, Korea
Graduate Research Assistant , University of Missouri	Aug. 2000 to May 2004
Visiting Scholar , University of Missouri	Nov. 1999 to Apr. 2000 Columbia, Missouri
Teaching assistant , Seoul National University	1995 to 1997
Research assistant , Seoul National University	1995 to 1997
Agricultural Engineering Researcher , Precision Agriculture Laboratory National Institute of Agricultural Engineering (NIAE), Rural Development Administration (RDA)	Aug. 1996 to Feb. 2007

Affiliations (Selected)

American Society of Agricultural and Biological Engineers	1998 to present
Korean Fuzzy Logic and Intelligent Systems Society	1997 to present
Korean Society for Agricultural Machinery (Board of Directors)	1996 to present
Institute of Control, Automation and Systems Engineers, Korea	1997 to present
Korean Society of Precision Agriculture (Vice President)	2013 to present
Korean Society for Horticultural Science	2008 to present
Asian Conference on Precision Agriculture (Executive Committee, 5 th Chair, 3 rd Secretary General)	2006 to present
Korean Society of Bio-Environmental Control (Board of Directors)	2008 to present

Awards (Selected)

Award Certificate (CNU, Korea)	Jan. 2018
Outstanding Presentation Award (KSAM, Korea)	Oct. 2017
Superior Paper Award (ASABE, USA)	Jul. 2017
Academic Award (KSAM, Korea)	Oct. 2015
Superior Paper Award (ASABE, USA)	Jul. 2013
Excellent Poster Award (ICPA)	Jun. 2013
Superior Paper Award (ASABE, USA)	Jun. 2010
Excellent Paper Award in Science and Technology (Korea)	Jul. 2009
Certificate of Commendation (NIAE, Suwon, Korea)	Dec. 2006
Assistantship and tuition-waiver as a half-time graduate research assistant (Biological Engineering Department, University of Missouri-Columbia)	Aug. 00 to May 04
Missouri Honor Award as an Outstanding Graduate Student (College of Engineering, UMC)	Mar. 2004
Outstanding Poster Award at the Second Poster Day Organized by the KSA (Signed by the Chancellor, UMC)	Apr. 2004
Outstanding Poster Award at the First Poster Day Organized by the KSA (Signed by the Chancellor, UMC)	Apr. 2003
Excellence in Leadership as the president of the KSA (Signed by the Chancellor, UMC)	Apr. 2003
Award as Authors of Outstanding Books of the Year (2 nd prize) (RDA, Suwon, Korea)	2001
Certificate of Appreciation (USDA-ARS, UMC)	Apr. 2000

Major Research Areas

- Agricultural Field Machinery
- Engineering Technologies for Precision Agriculture
- Sensing and Control of Bio-production Environment

A short biography of Sun-Ok Chung

Education: Obtained BS and MS at Department of Agricultural Machinery, Seoul National University, in 1995 and 1997, respectively. Obtained Ph.D. at Biological Engineering, University of Missouri, in 2004. Ph.D. topic was “On-the-go Soil Strength Profile Sensor”.

Professional Career: Professional career started at Rural Development Administration in 1998. In 2007, moved to Chungnam National University, as a faculty at Department of Biosystems Machinery Engineering, College of Agriculture and Life Sciences.

Research area: Agricultural production field machinery and systems, engineering technologies for precision agriculture, and sensors and controllers for protected agricultural production system.

Affiliations: American Society of Agricultural and Biological Engineers, Korean Fuzzy Logic and Intelligent Systems Society, Korean Society of Precision Agriculture, Korean Society of Horticultural Science, Indian Society of Agricultural Engineering. Served as the Secretary General, and the Chair-person for 2nd and 5th Asian Conference of Precision Agriculture, respectively. Serving as a member of Executive Committee of ACPA, Vice President of Korean Society of Precision Agriculture, Chair-person of International Cooperation Committee of Korean Society for Agricultural Machinery

Publication List (Selected, last 5 years)

International Journal Article: 38

- P.A. Tuan, C.H. Park, W.T. Park, Y.B. Kim, Y.J. Kim, S.O. Chung, J.K. Kim, and S.U. Park. 2017. Expression levels of carotenoid biosynthetic genes and carotenoid production in the callus of *scutellaria baicalensis* exposed to white, blue, and red light-emitting diodes. *Appl Biol Chem* (2017) 60(6): 591–596.
- Y.J. Kim, S.O. Chung, J.K. Kim, and S.U. Park. 2017. RECENT STUDIES ON RESVERATROL AND ITS BIOLOGICAL AND PHARMACOLOGICAL ACTIVITY. *EXCLI Journal* 2017;16:602-608, ISSN 1611-2156
- D.H. Lee, Y.J. Kim, C.H. Choi, S.O. Chung, E. Inoue, and T. Okayasu. 2017. Development of a Parallel Hybrid System for Agricultural Tractors. *J. Fac. Agr., Kyushu Univ.*, 62 (1), 137–144.
- Md. S.N. Kabir, S.O. Chung, Y.J. Kim, N.S. Sung, and S.J. Hong. 2017. Measurement and evaluation of whole body vibration of agricultural tractor operator. *Int J Agric & Biol Eng*, 2017; 10(1): 248–255.
- M.K. Cha, Y.A. Jeon, J.E. Son, S.O. Chung, and Y.Y. Cho. 2016. Development of a Greenhouse Environment Monitoring System using Low-cost Microcontroller and Open-source Software. *Korean J. Hortic. Sci. Technol.* 34(6): 860-870.
- Y.J. Cho, K.A. Sudduth, and S.O. Chung. 2016. Soil physical property estimation from soil strength and apparent electrical conductivity sensor data. *biosystems engineering* 152 (2016) 68-78.
- Md. S.N. Kabir, S.O. Chung, Y.J. Kim, G.J. Lee, S.H. Yu, K.H. Lee, T. Okayasu and E. Inoue. 2016. Sensor Comparison for Grass Growth Estimation. *J. Fac. Agr., Kyushu Univ.*, 61 (2), 367–374.
- W.J. La, K.A. Sudduth, H.J. Kim, and S.O. Chung. 2016. FUSION OF SPECTRAL AND ELECTROCHEMICAL SENSOR DATA FOR ESTIMATING SOIL MACRONUTRIENTS. *Transactions of the ASABE Vol. 59(4): 787-794*, ISSN 2151-0032.
- D.H. Lee, Y.J. Kim, C.H. Choi, S.O. Chung, Y.S. Nam, and J.H. So. 2016. Evaluation of operator visibility in three different cabins type Far-East combine harvesters. *Int J Agric & Biol Eng*, 2016; 9(4): 33–44.
- D.H. Lee, C.H. Choi, S.O. Chung, Y.J. Kim, K.H. Lee, and B.S. Shin. 2016. DEVELOPMENT OF A PLOW TILLAGE CYCLE FOR AN AGRICULTURAL TRACTOR. *Transactions of the ASABE Vol. 59(2): 445-454*, ISSN 2151-0032.
- M.K. Lee, M.V. Arasu, S.H. Park, D.H. Byeon, S.O. Chung, S.U. Park, Y.P. Lim, and S.J. Kim. 2016. LED Lights Enhance Metabolites and Antioxidants in Chinese Cabbage and Kale. *Braz. Arch. Biol. Technol.* v.59: e16150546, ISSN 1678-4324.
- S.Y. Lee, Y.J. Kim, S.O. Chung, and S.U. Park. 2016. RECENT STUDIES ON URSOLIC ACID AND ITS BIOLOGICAL AND PHARMACOLOGICAL ACTIVITY. *EXCLI Journal* 2016;15:221-228, ISSN 1611-2156.
- D.H. Lee, C.H. Choi, S.O. Chung, Y.J. Kim, E. Inoue, and T. Okayasu. 2016. Evaluation of Tractor Fuel Efficiency using Dynamometer and Baler Operation Cycle. *J. Fac. Agr., Kyushu Univ.*, 61 (1), 173–182.
- Md. S.N. Kabir, M.Z. Song, N.S. Sung, S.O. Chung, Y.J. Kim, N. Noguchi, and S.J. Hong. 2016. Evaluation of Tractor Fuel Efficiency using Dynamometer and Baler Operation Cycle. *Engineering in Agriculture, Environment and Food*, Vol 9, 27-35.
- S.O. Chung, S.W. Kang, K.S. Bae, M.J. Ryu, and Y.J. Kim. 2015. The potential of remote monitoring and control of protected crop production environment using mobile phone under 3G and Wi-Fi communication conditions. *Engineering in Agriculture, Environment and Food* 8 (2015) 251-256.
- D.H. Lee, Y.J. Kim, S.O. Chung, C.H. Choi, K.H. Lee, and B.S. Shin. 2015. Analysis of the PTO load of a 75 kW agricultural tractor during rotary tillage and baler operation in Korean upland fields. *Journal of Terramechanics* 60 (2015) 75–83.
- C.H. Park, S.C. Chae, S.Y. Park, J.K. Kim, Y.J. Kim, S.O. Chung, M.V. Arasu, N.A. Al-Dhabi, and S.U. Park. 2015. Anthocyanin and Carotenoid Contents in Different Cultivars of *Chrysanthemum* (*Dendranthema grandiflorum* Ramat.) Flower. *Molecules* 2015, 20, 11090-11102.
- S.O. Chung, Y.J. Kim, and S.U. Park. 2015. AN UPDATED REVIEW OF CUCURBITACINS AND THEIR BIOLOGICAL AND PHARMACOLOGICAL ACTIVITIES. *EXCLI Journal* 2015;14:562-566, ISSN 1611-2156.

- H.H. Lee, S.C. Yang, M.K. Lee, D.K. Ryu, S.H. Park, S.O. Chung, S.U. Park, Y.P. Lim, and S.J. Kim. 2015. Effect of Developmental Stages on Glucosinolate Contents in Kale (*Brassica oleracea* var. *acephala*). *Kor. J. Hort. Sci. Technol.* 33(2):177-185.
- H.J. Kim, D.H. Lee, S.W. Ahn, W.K. Kim, S.O. Hur, J.Y. Choi, and S.O. Chung. 2015. Design and testing of an autonomous irrigation controller for precision water management of greenhouse crops. *Engineering in Agriculture, Environment and Food* 8 (2015) 228-234.
- V.D. Ngo, S.O. Chung, S.U. Park, S.J. Kim, J.T. Park, Y.J. Kim. 2015. Determination of the sample number for optical reflectance measurement of vegetable leaf. *Computers and Electronics in Agriculture* 112 (2015) 110–115.
- Y.J. Kim, W.S. Kim, S.O. Chung, and D.H. Lee. 2014. Analysis of Technical Trend of Electric Agricultural Field Machinery. *Agribusiness and Information Management* Vol.6 No.2 2014: 40-48, ISSN 2234-3075(Print), ISSN 2288-7806(Online).
- M.K. Lee, J.H. Chun, D.H. Byeon, S.O. Chung, S.U. Park, S.H. Park, M.V. Arasu, N.A. Al-Dhabi, Y.P. Lim, and S.J. Kim. 2014. Variation of glucosinolates in 62 varieties of Chinese cabbage (*Brassica rapa* L. ssp *pekinensis*) and their antioxidant activity. *LWT - Food Science and Technology* 58 (2014) 93-101.
- M.J. Kim, Y.K. Choo, Y.J. Kim, and S.O. Chung. 2014. Evaluation of Light Intensity and Uniformity of LEDs for Protected Crop Production. *Agribusiness and Information Management* Vol.6 No.1 2014: 37-44, ISSN 2234-3075 (Print), ISSN 2288-7806 (Online).
- Y.J. Kim, S.O. Chung, C.H. Lee, D.H. Lee, and K.H. Lee. 2014. Patent Trend of Unmanned and Automated Agricultural Production –Open Field Operation. *Agribusiness and Information Management* Vol.6 No.1 2014: 30-36, ISSN 2234-3075 (Print), ISSN 2288-7806 (Online).
- S.O. Chung, Y.M. Kim, D.G. Ryu, S.J. Kim, and J.T. Park. 2014. Variation of Functional Compounds in Leafy Chinese Cabbage Grown Under Different Light Conditions in a Plant Factory. *KOREAN J. FOOD SCI. TECHNOL.* Vol. 46, No. 4, pp. 1~4.
- S.W. Back, S.H. Yu, Y.J. Kim, S.O. Chung, and K.H. Lee. 2014. AN IMAGE-BASED APPLICATION RATE MEASUREMENT SYSTEM FOR A GRANULAR FERTILIZER APPLICATOR. *Transactions of the ASABE* Vol. 57(2): 679-687.
- A. A. Thwe, Y.B. Kim, X.H. Li, J.M. Seo, S.J. Kim, T. Suzuki, S.O. Chung and S.U. Park. 2014. Effects of Light-Emitting Diodes on Expression of Phenylpropanoid Biosynthetic Genes and Accumulation of Phenylpropanoids in *Fagopyrum tataricum* Sprouts. *J. Agric. Food Chem.* 2014, 62, 4839–4845.
- D.K. Ryu, S.W. Kang, V.D. Ngo, S.O. Chung, J.M. Choi, S.U. Park, and S.J. Kim. 2014. Control of Temperature, Humidity and CO₂ Concentration in Small Sized Experimental Plant Factory. *Acta Horticulturae* 1037: 477-484.
- V.D. Ngo, D.K. Ryu, S.W. Kang, S.O. Chung, S.U. Park, S.J. Kim, and J.T. Park. 2014. Correlation between Glucosinolate Content and Spectral Reflectance of Cabbage Leaves Using a Spectrometer. *Acta Horticulturae* 1037: 285-291.
- J.K. Kim, Y.S. Kim, Y.J. Kim, Md. Romij Uddin, Y.B. Kim, H.H. Kim, S.Y. Park, M.Y. Lee, S.O. Chung, and S.U. Park. 2014. Comparative analysis of flavonoids and polar metabolites from hairy roots of *Scutellaria baicalensis* and *Scutellaria lateriflora*. *World J Microbiol Biotechnol* (2014) 30:887–892.
- P.A. Tuan, A.A. Thwe, Y.B. Kim, J.K. Kim, S.J. Kim, S.H. Lee, S.O. Chung, and S.U. Park. 2013. Effects of White, Blue, and Red Light-Emitting Diodes on Carotenoid Biosynthetic Gene Expression Levels and Carotenoid Accumulation in Sprouts of Tartary Buckwheat (*Fagopyrum tataricum* Gaertn.). *J. Agric. Food Chem.* 2013, 61, 12356–12361.
- Y.J. Kim, S.O. Chung, and C.H. Choi. 2013. Effects of gear selection of an agricultural tractor on transmission and PTO load during rotary tillage. *Soil & Tillage Research* 134 (2013) 90–96.
- A.A. Thwe, S.C. Chae, S.O. Chung, and S.U. Park. 2013. Enhancement of the in vitro root regeneration efficiency of *Rehmannia glutinosa* Libosch. stem explants by different carbon sources. *Life Science Journal* 2013;10(3): 579-582.
- S.C. Chae, S.O. Chung, and S.U. Park. 2013. Influence of cytokinins and auxins on plant regeneration from hairy roots of *Rehmannia elata*. *Life Science Journal* 2013;10(3): 1171-1174.
- A.A. Thwe, S.C. Chae, S.O. Chung, and S.U. Park. 2013. Influence of medium and auxin concentration on in vitro rooting of *Rehmannia glutinosa* L.. *Life Science Journal* 2013;10(3): 685-688.
- S.C. Chae, S.O. Chung, and S.U. Park. 2013. Shoot organogenesis and plant regeneration of *Aloe saponaria*. *Life Science Journal* 2013;10(3): 575-578.

- S.O. Chung, K.A. Sudduth, P.P. Motavalli, and N.R. Kitchen. 2013. Relating mobile sensor soil strength to penetrometer cone index. *Soil & Tillage Research* 129 (2013) 9–18

Korean Journal Article: 28

- S.J. Hong, S.B. Park, N.R. Kang, Y.J. Kim, and S.O. Chung. 2017. Performance evaluation of a 400 W precise window motor for glass houses. *Korean Journal of Agricultural Science* 44: 595-603, ISSN (Print): 2466-2402, ISSN (Online): 2466-2410.
- J.H. Jang, S.O. Chung, C.H. Choi, Y.J. Park, W.K. Chun, S.I. Kim, O.W. Kwon, C.W. Kim, S.J. Hong, and Y.J. Kim. 2016. Effects of PTO gear face width on safety factors. *Korean Journal of Agricultural Science* 43: 650-655, ISSN (Print): 2466-2402, ISSN (Online): 2466-2410.
- P.U. Lee, S.O. Chung, C.H. Choi, J.H. Joo, J.Y. Rhee, Y.S. Choi, J.W. Ha, Y.J. Park, S.J. Hong, Y.J. Kim. 2016. Load capacity simulation of an agricultural gear reducer by surface heat treatment. *Korean Journal of Agricultural Science* 43: 656-664, ISSN (Print): 2466-2402, ISSN (Online): 2466-2410.
- W.S. Kim, S.O. Chung, C.H. Choi, J.S. Cho, D.S. Choi, Y.J. Kim, S.D. Lee, S.J. Hong, Y.J. Kim, and S.M. Koo. 2016. Analysis of the PTO Torque of a Transplanter by Planting Condition. *J. of Biosystems Eng.* 41(4):313-318, eISSN: 2234-1862, pISSN: 1738-1266.
- S.O. Chung, M.C. Choi, K.H. Lee, Y.J. Kim, S.J. Hong, and M.Z. Li. 2016. Sensing Technologies for Grain Crop Yield Monitoring Systems: A Review. *J. of Biosystems Eng.* 41(4):408-417, eISSN: 2234-1862, pISSN: 1738-1266.
- S.O. Chung, Y.J. Kim, M.C. Choi, K.H. Lee, J.K. Ha, T.K. Kang, and Y.K. Kim. 2016. Development of a hydraulic power transmission system for the 3-point hitch of 50-kW narrow tractors. *Korean Journal of Agricultural Science* 43:450-458, ISSN (Print): 2466-2402, ISSN (Online): 2466-2410.
- P.U. Lee, S.O. Chung, C.H. Choi, Y.J. Park, and Y.J. Kim. 2016. Analysis of the effects of operating point of tractor engine on fatigue life of PTO gear using simulation. *Korean Journal of Agricultural Science* 43:441-449. ISSN (Print): 2466-2402, ISSN (Online): 2466-2410.
- W.S. Kim, Y.J. Kim, S.O. Chung, D.H. Lee, C.H. Choi, and Y.W. Yoon. 2016. Development of simulation model for fuel efficiency of agricultural tractor. *Korean Journal of Agricultural Science* 43:116-126, ISSN (Print): 2466-2402, ISSN (Online): 2466-2410.
- D.H. Lee, Y.J. Kim, T.H. Kim, S.O. Chung, and C.H. Choi. 2016. Development and Evaluation of Automatic Steering System for Parallel Parking. *Journal of Drive and Control*, Vol.13 No.1 pp.18-26, ISSN(print) 2234-8328, ISSN(online) 2287-6146.
- S.O. Chung, Y.J. Kim, K.H. Lee, N.S. Sung, C.H. Lee, and H.K. Noh. 2015. Remote monitoring of light environment using web-camera for protected chrysanthemum production. *CNU Journal of Agricultural Science* Vol. 42, No. 4, pp. 447-453.
- V.D. Ngo, S.W. Kang, D.K. Ryu, S.O. Chung, S.U. Park, S.J. Kim, and J.T. Park. 2015. Location of Sampling Points in Optical Reflectance Measurements of Chinese Cabbage and Kale Leaves. *J. of Biosystems Eng.* 40(2): 115-123, eISSN: 2234-1862, pISSN: 1738-1266.
- M.J. Ryu, Md. S.N. Kabir, Y.K. Choo, S.O. Chung, Y.J. Kim, J.K. Ha, and K.H. Lee. 2015. Pre-processing of load data of agricultural tractors during major field operations. *CNU Journal of Agricultural Science* Vol. 42, No. 1, pp. 53-61.
- Md. S.N. Kabir, M.Z. Song, S.O. Chung, Y.J. Kim, S.C. Kim, and J.K. Ha. 2015. Visibility Evaluation for Agricultural Tractor Operators According to ISO 5006 and 5721-1 Standards. *J. of Biosystems Eng.* 40(1):19-27, eISSN: 2234-1862, pISSN: 1738-1266.
- M.Z. Song, Md. S.N. Kabir, S.O. Chung, Y.J. Kim, J.K. Ha, and K.H. Lee. 2015. Path planning for autonomous lawn mower tractor. *CNU Journal of Agricultural Science* Vol. 42, No. 1, pp. 63-71.
- S.O. Chung, K.A. Sudduth, S.T. Drummond, and N.R. Kitchen. 2014. Spatial Variability of Soil Properties using Nested Variograms at Multiple Scales. *J. of Biosystems Eng.* 39(4):377-388, eISSN: 2234-1862, pISSN: 1738-1266.
- Md. S.N. Kabir, S.O. Chung, Y.J. Kim, and S.H. Shin. 2014. Comparison of Test Standards for the Performance and Safety of Agricultural Tractors: A Review. *J. of Biosystems Eng.* 39(3):158-165, eISSN: 2234-1862, pISSN: 1738-1266.
- S.O. Chung, V.D. Ngo, Md. S.N. Kabir, S.J. Hong, S.U. Park, S.J. Kim, and J.T. Park. 2014. Number of sampling leaves for reflectance measurement of Chinese cabbage and kale, *CNU Journal of Agricultural Science* Vol. 41, No. 3, pp. 169-175.

- Md. S.N. Kabir, M.J. Ryu, S.O. Chung, Y.J. Kim, C.H. Choi, S.J. Hong, and J.H. Sung. 2014. Research Trends for Performance, Safety, and Comfort Evaluation of Agricultural Tractors: A Review. *J. of Biosystems Eng.* 39(1):21-33, eISSN: 2234-1862, pISSN: 1738-1266.
- M.J. Ryu, D.K. Ryu, , S.O. Chung, Y.K. Hur, S.O. Hur, S.J. Hong, J.H. Sung, and H.H. Kim. 2014. Spatial, Vertical, and Temporal Variability of Ambient Environments in Strawberry and Tomato Greenhouses in Winter. *J. of Biosystems Eng.* 39(1):47-56, eISSN: 2234-1862, pISSN: 1738-1266.
- D.K. Ryu, M.J. Ryu, S.O. Chung, S.O. Hur, S.J. Hong, J.H. Sung, and H.H. Kim. 2014. Variability of Soil Water Content, Temperature, and Electrical Conductivity in Strawberry and Tomato Greenhouses in Winter. *J. of Biosystems Eng.* 39(1):39-46, eISSN: 2234-1862, pISSN: 1738-1266.
- S.J. Hong, Y.K. Huh, and S.O. Chung. 2013. Strategic improvement of short-term agricultural machinery rental system using importance performance analysis. *CNU Journal of Agricultural Science* Vol. 40, No. 4, pp. 385-394.
- D.K. Ryu, S.W. Kang, S.O. Chung, and S.J. Hong. 2013. Performance analysis of an experimental plant factory. *CNU Journal of Agricultural Science* Vol. 40, No. 4, pp. 395-403.
- H.J. Kim, S.W. Ahn, K.H. Han, J.Y. Choi, S.O. Chung, M.Y. Roh, and S.O. Hur. 2013. Comparison Study of Water Tension and Content Characteristics in Differently Textured Soils under Automatic Drip Irrigation. *Protected Horticulture and Plant Factory*, Vol. 22, No. 4: 1-8, pISSN 2288-0992, eISSN 2288-100X.
- J.C. Kim, S.O. Chung, B.K. Cho, H.H. Chang, S. Kim, and D.I. Chang. 2013. Development of an Automated Measurement System for Dilution Process and Spraying Amount of Disinfectant. *J. of Biosystems Eng.* 38(4):228-239, eISSN: 2234-1862, pISSN: 1738-1266.
- D.I. Chang, S.O. Chung, B.K. Cho, D.S. Park, N.S. Sung, J.C. Kim, I.H. Lee, and J.T. Park. 2013. The Evaluation of a General Purpose Bale System Performance and Its Bale Quality. *J. of Biosystems Eng.* 38(4):223-227, eISSN: 2234-1862, pISSN: 1738-1266.
- N.S. Sung, D.I. Chang, Y.K. Huh, S.O. Chung, J.S. Cho, and J.K. Ha. 2013. Study on performance test of orchard tractor power transmission systems. *CNU Journal of Agricultural Science* Vol. 40, No. 3, pp. 237-241.
- S.M. Koo, J.W. Lee, S.B. Kim, S.O. Chung, and Y.P. Lim. 2013. Economic Feasibility of the Small-scale Foreign Forest Resource Investment in Lao PDR. *Korean J. Intl. Agri.* 25(2): 110~117.
- V.D. Ngo, D.K. Ryu, S.O. Chung, S.U. Park, S.J. Kim, and J.T. Park. 2013. Comparison of optical reflectance spectrum at blade and vein parts of cabbage and kale leaves. *CNU Journal of Agricultural Science* Vol. 40, No. 2, pp. 163-167.
- M.J. Ryu, S.O. Chung, Y.J. Kim, D.H. Lee, C.H. Choi, and K.H. Lee. 2013. FFT analysis of load data during field operations using a 75-kW agricultural tractor. *CNU Journal of Agricultural Science* Vol. 40, No. 1, pp. 53-59.